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Instruction Manual

ESAB 350mpi
POWER SOURCE

P/N 36975 - 208-230/460 Vac 3-phase, 230 Vac 1-phase, 60 Hz
P/N 36977 - 400/440 Vac 3-phase 50/60 Hz
P/N 36976 - 575 Vac 3-phase, 60 Hz

CAUTION

These INSTRUCTIONS are for experienced operators. If you are not fully familiar with the principles of operation and safe practices for arc welding equipment, we urge you to read our booklet, "Precautions and Safe Practices for Arc Welding, Cutting, and Gouging", Form 52-529. Do NOT permit untrained persons to install, operate, or maintain this equipment. Do NOT attempt to install or operate this equipment until you have read and fully understand these instructions. If you do not fully understand these instructions, contact your supplier for further information. Be sure to read the Safety Precautions before installing or operating this equipment.

Be sure this information reaches the operator.
You can get extra copies through your supplier.

ESAB® ESAB Welding & Cutting Products

USER RESPONSIBILITY

This equipment will perform in conformity with the description thereof contained in this manual and accompanying labels and/or inserts when installed, operated, maintained and repaired in accordance with the instructions provided. This equipment must be checked periodically. Malfunctioning or poorly maintained equipment should not be used. Parts that are broken, missing, worn, distorted or contaminated should be replaced immediately. Should such repair or replacement become necessary, the manufacturer recommends that a telephone or written request for service advice be made to the Authorized Distributor from whom purchased.

This equipment or any of its parts should not be altered without the prior written approval of the manufacturer. The user of this equipment shall have the sole responsibility for any malfunction which results from improper use, faulty maintenance, damage, improper repair or alteration by anyone other than the manufacturer or a service facility designated by the manufacturer.

PREFACE

The purpose of this manual is to provide the operator with information required to install and operate the power source. Some technical reference material is also provided to assist in basic troubleshooting the power source. If it is determined that the power supply is not operating properly, the operator should contact ESAB at (843) 664-4416 for assistance.

The following is a list of terms/acronyms used throughout this manual.

CC	Constant Current
CV	Constant Voltage
GMAW	Gas Metal Arc Welding, CV mode (same as MIG)
GMAW-P	Gas Metal Arc Welding - Pulsed, CV mode (same as pulsed MIG)
GTAW	Gas Tungsten Arc Welding, CC mode (same as TIG)
MIG	Metal Inert Gas, CV mode (same as GMAW)
SMAW	Shielded Metal Arc Welding, CC mode (same as Stick)
Stick	Stick Welding, CC mode (same as SMAW)
TIG	Tungsten Inert Gas, CC mode (same as GTAW)

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SAFETY PRECAUTIONS

WARNING: These Safety Precautions are for your protection. They summarize precautionary information from the references listed in Additional Safety Information section. Before performing any installation or operating procedures, be sure to read and follow the safety precautions listed below as well as all other manuals, material safety data sheets, labels, etc. Failure to observe Safety Precautions can result in injury or death.

PROTECT YOURSELF AND OTHERS -- Some welding, cutting, and gouging processes are noisy and require ear protection. The arc, like the sun, emits ultraviolet (UV) and other radiation and can injure skin and eyes. Hot metal can cause burns. Training in the proper use of the processes and equipment is essential to prevent accidents. Therefore:

1. Always wear safety glasses with side shields in any work area, even if welding helmets, face shields, and goggles are also required.
2. Use a face shield fitted with the correct filter and cover plates to protect your eyes, face, neck, and ears from sparks and rays of the arc when operating or observing operations. Warn bystanders not to watch the arc and not to expose themselves to the rays of the electric-arc or hot metal.
3. Wear flameproof gauntlet type gloves, heavy long-sleeve shirt, cuffless trousers, high-topped shoes, and a welding helmet or cap for hair protection, to protect against arc rays and hot sparks or hot metal. A flameproof apron may also be desirable as protection against radiated heat and sparks.
4. Hot sparks or metal can lodge in rolled up sleeves, trouser cuffs, or pockets. Sleeves and collars should be kept buttoned, and open pockets eliminated from the front of clothing
5. Protect other personnel from arc rays and hot sparks with a suitable non-flammable partition or curtains.
6. Use goggles over safety glasses when chipping slag or grinding. Chipped slag may be hot and can fly far. Bystanders should also wear goggles over safety glasses.

FIRES AND EXPLOSIONS -- Heat from flames and arcs can start fires. Hot slag or sparks can also cause fires and explosions. Therefore:

1. Remove all combustible materials well away from the work area or cover the materials with a protective non-flammable covering. Combustible materials include wood, cloth, sawdust, liquid and gas fuels, solvents, paints and coatings, paper, etc.
2. Hot sparks or hot metal can fall through cracks or crevices in floors or wall openings and cause a hidden smoldering fire or fires on the floor below. Make certain that such openings are protected from hot sparks and metal.“
3. Do not weld, cut or perform other hot work until the workpiece has been completely cleaned so that there are no substances on the workpiece which might produce flammable or toxic vapors. Do not do hot work on closed containers. They may explode.
4. Have fire extinguishing equipment handy for instant use, such as a garden hose, water pail, sand bucket, or portable fire extinguisher. Be sure you are trained in its use.
5. Do not use equipment beyond its ratings. For example, overloaded welding cable can overheat and create a fire hazard.
6. After completing operations, inspect the work area to make certain there are no hot sparks or hot metal which could cause a later fire. Use fire watchers when necessary.
7. For additional information, refer to NFPA Standard 51B, "Fire Prevention in Use of Cutting and Welding Processes", available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

ELECTRICAL SHOCK -- Contact with live electrical parts and ground can cause severe injury or death. DO NOT use AC welding current in damp areas, if movement is confined, or if there is danger of falling.

1. Be sure the power source frame (chassis) is connected to the ground system of the input power.
2. Connect the workpiece to a good electrical ground.
3. Connect the work cable to the workpiece. A poor or missing connection can expose you or others to a fatal shock.
4. Use well-maintained equipment. Replace worn or damaged cables.
5. Keep everything dry, including clothing, work area, cables, torch/electrode holder, and power source.
6. Make sure that all parts of your body are insulated from work and from ground.
7. Do not stand directly on metal or the earth while working in tight quarters or a damp area; stand on dry boards or an insulating platform and wear rubber-soled shoes.
8. Put on dry, hole-free gloves before turning on the power.
9. Turn off the power before removing your gloves.
10. Refer to ANSI/ASC Standard Z49.1 (listed on next page) for specific grounding recommendations. Do not mistake the work lead for a ground cable.

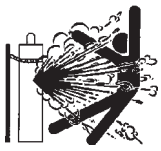
ELECTRIC AND MAGNETIC FIELDS — May be dangerous. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding and cutting current creates EMF around welding cables and welding machines. Therefore:

1. Welders having pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
2. Exposure to EMF may have other health effects which are unknown.
3. Welders should use the following procedures to minimize exposure to EMF:
   A. Route the electrode and work cables together. Secure them with tape when possible.
   B. Never coil the torch or work cable around your body.
   C. Do not place your body between the torch and work cables. Route cables on the same side of your body.
   D. Connect the work cable to the workpiece as close as possible to the area being welded.
   E. Keep welding power source and cables as far away from your body as possible.

SAFETY PRECAUTIONS

FUMES AND GASES -- Fumes and gases, can cause discomfort or harm, particularly in confined spaces. Do not breathe fumes and gases. Shielding gases can cause asphyxiation. Therefore:

1. Always provide adequate ventilation in the work area by natural or mechanical means. Do not weld, cut, or gouge on materials such as galvanized steel, stainless steel, copper, zinc, lead, beryllium, or cadmium unless positive mechanical ventilation is provided. Do not breathe fumes from these materials.
2. Do not operate near degreasing and spraying operations. The heat or arc rays can react with chlorinated hydrocarbon vapors to form phosgene, a highly toxic gas, and other irritant gases.
3. If you develop momentary eye, nose, or throat irritation while operating, this is an indication that ventilation is not adequate. Stop work and take necessary steps to improve ventilation in the work area. Do not continue to operate if physical discomfort persists.
4. Refer to ANSI/ASC Standard Z49.1 (see listing below) for specific ventilation recommendations.
5. **WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code §25249.5 et seq.)**



CYLINDER HANDLING -- Cylinders, if mishandled, can rupture and violently release gas. Sudden rupture of cylinder, valve, or relief device can injure or kill. Therefore:

1. Use the proper gas for the process and use the proper pressure reducing regulator designed to operate from the compressed gas cylinder. Do not use adaptors. Maintain hoses and fittings in good condition. Follow manufacturer's operating instructions for mounting regulator to a compressed gas cylinder.
2. Always secure cylinders in an upright position by chain or strap to suitable hand trucks, undercarriages, benches, walls, post, or racks. Never secure cylinders to work tables or fixtures where they may become part of an electrical circuit.
3. When not in use, keep cylinder valves closed. Have valve protection cap in place if regulator is not connected. Secure and move cylinders by using suitable hand trucks. Avoid rough handling of cylinders.
4. Locate cylinders away from heat, sparks, and flames. Never strike an arc on a cylinder.
5. For additional information, refer to CGA Standard P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders", which is available from Compressed Gas Association, 1235 Jefferson Davis Highway, Arlington, VA 22202.

EQUIPMENT MAINTENANCE -- Faulty or improperly maintained equipment can cause injury or death. Therefore:

1. Always have qualified personnel perform the installation, troubleshooting, and maintenance work. Do not perform any electrical work unless you are qualified to perform such work.
2. Before performing any maintenance work inside a power source, disconnect the power source from the incoming electrical power.
3. Maintain cables, grounding wire, connections, power cord, and power supply in safe working order. Do not operate any equipment in faulty condition.
4. Do not abuse any equipment or accessories. Keep equipment away from heat sources such as furnaces, wet conditions such as water puddles, oil or grease, corrosive atmospheres and inclement weather.
5. Keep all safety devices and cabinet covers in position and in good repair.
6. Use equipment only for its intended purpose. Do not modify it in any manner.

ADDITIONAL SAFETY INFORMATION -- For more information on safe practices for electric arc welding and cutting equipment, ask your supplier for a copy of "Precautions and Safe Practices for Arc Welding, Cutting and Gouging", Form 52-529.

The following publications, which are available from the American Welding Society, 550 N.W. LeJuene Road, Miami, FL 33126, are recommended to you:

1. ANSI/ASC Z49.1 - "Safety in Welding and Cutting"
2. AWS C5.1 - "Recommended Practices for Plasma Arc Welding"
3. AWS C5.2 - "Recommended Practices for Plasma Arc Cutting"
4. AWS C5.3 - "Recommended Practices for Air Carbon Arc Gouging and Cutting"
5. AWS C5.5 - "Recommended Practices for Gas Tungsten Arc Welding"
6. AWS C5.6 - "Recommended Practices for Gas Metal Arc Welding""
7. AWS SP - "Safe Practices" - Reprint, Welding Handbook.
8. ANSI/AWS F4.1, "Recommended Safe Practices for Welding and Cutting of Containers That Have Held Hazardous Substances."

MEANING OF SYMBOLS - As used throughout this manual: Means Attention! Be Alert! Your safety is involved.

DANGER **Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.**

WARNING **Means potential hazards which could result in personal injury or loss of life.**

CAUTION **Means hazards which could result in minor personal injury.**

PRÉCAUTIONS DE SÉCURITÉ

AVERTISSEMENT: Ces règles de sécurité ont pour objet d' assurer votre protection. Veillez à lire et à observer les précautions énoncées ci-dessous avant de monter l' équipement ou de commercer à l'utiliser. Tout défaut d'observation de ces précautions risque d'entraîner des blessures graves ou mortelles.

1. PROTECTION INDIVIDUELLE-- Les brûlures de la peau et des yeux dues au rayonnement de l'arc électrique ou du métal incandescent, lors du soudage au plasma ou à l'électrode ou lors du gougeage à l'arc, peuvent s'avérer plus graves que celles résultant d'une exposition prolongée au soleil. Aussi convient-il d'observer les précautions suivantes:

a. Portez un écran facial adéquat muni des plaques protectrices et des verres filtrants appropriés afin de vous protéger les yeux, le visage, le cou et les oreilles des étincelles et du rayonnement de l'arc électrique lorsque vous effectuez des soudures ou des coupes ou lorsque vous en observez l'exécution.
AVERTISSEZ les personnes se trouvant à proximité de façon à ce qu'elles ne regardent pas l'arc et à ce qu'elles ne s'exposent pas à son rayonnement, ni à celui du métal incandescent.

b. Portez des gants ignifugés à crispins, une tunique épaisse à manches longues, des pantalons sans rebord, des chaussures à embout d'acier et un casque de soudage ou une calotte de protection, afin d'éviter d'exposer la peau au rayonnement de l'arc électrique ou du métal incandescent. Il est également souhaitable d'utiliser un tablier ininflammable de façon à se protéger des étincelles et du rayonnement thermique.

c. Les étincelles ou les projections de métal incandescent risquent de se loger dans des manches retroussées, des bords relevés de pantalons ou dans des poches. Aussi convient-il de garder boutonnés le col et les manches et de porter des vêtements sans poches à l'avant.

d. Protégez des étincelles et du rayonnement de l'arc électrique les autres personnes travaillant à proximité à l'aide d'un écran ininflammable adéquat.

e. Ne jamais omettre de porter des lunettes de sécurité lorsque vous vous trouvez dans un secteur où l'on effectue des opérations de soudage ou de coupage à l'arc. Utilisez des lunettes de sécurité à écrans ou verres latéraux pour piquer ou meûler le laitier. Les piquetures incandescentes de laitier peuvent être projetées à des distances considérables. Les personnes se trouvant à proximité doivent également porter des lunettes de protection.

f. Le gougeage à l'arc et le soudage à l'arc au plasma produisent un niveau de bruit extrêmement élevé (de 100 à 114 dB) et exigent par conséquent l'emploi de dispositifs appropriés de protection auditive.

2. PRÉVENTION DES INCENDES-- Les projections de laitier incandescent ou d'étincelles peuvent provoquer de graves incendies au contact de matériaux combustibles solides, liquides ou gazeux. Aussi faut-il observer les précautions suivantes:

a. Éloigner suffisamment tous les matériaux combustibles du secteur où l'on exécute des soudures ou des coupes à l'arc, à moins de les recouvrir complètement d'une bâche non-inflammable. Ce type de matériaux comprend notamment le bois, les vêtements, la sciure, l'essence, le kérosène, les peintures, les solvants, le gaz naturel, l'acétylène, le propane et autres substances combustibles semblables.

b. Les étincelles ou les projections de métal incandescent peuvent tomber dans des fissures du plancher ou dans des ouvertures des murs et y déclencher une ignition lente cachée. Veiller à protéger ces ouvertures des étincelles et des projections de métal.

c. N'exécutez pas de soudures, de coupes, d'opérations de gougeage ou autres travaux à chaud à la surface de barils, bidons, réservoirs ou autres contenants usagés, avant de les avoir nettoyés de toute trace de substance susceptible de produire des vapeurs inflammables ou toxiques.

d. En vue d'assurer la prévention des incendies, il convient de disposer d'un matériel d'extinction prêt à servir immédiatement, tel qu'un tuyau d'arrosage, un seau à eau, un seau de sable ou un extincteur portatif.

e. Une fois le travail à l'arc terminé, inspectez le secteur de façon à vous assurer qu'aucune étincelle ou projection de métal incandescent ne risque de provoquer ultérieurement un feu.

3. CHOC ÉLECTRIQUE-- Le gougeage à l'arc et à l'arc au plasma exige l'emploi de tensions à vide relativement importantes; or, celles-ci risquent de causer des dommages corporels graves et même mortels en cas d'utilisation inadéquate. La gravité du choc électrique reçu dépend du chemin suivi par le courant à travers le corps humain et de son intensité.

a. Ne laissez jamais de surfaces métalliques sous tension venir au contact direct de la peau ou de vêtements humides. Veillez à porter des gants bien secs.

b. Si vous devez effectuer un travail sur une surface métallique ou dans un secteur humide, veillez à assurer votre isolation corporelle en portant des gants secs et des chaussures à semelles de caoutchouc et en vous tenant sur une planche ou une plate-forme sèche.

c. Mettez toujours à la terre le poste de soudage/coupage en le reliant par un câble à une bonne prise de terre.

d. N'utilisez jamais de câbles usés ou endommagés. Ne surchargez jamais le câble. Utilisez toujours un équipement correctement entretenu.

e. Mettez l'équipement hors tension lorsqu'il n'est pas en service. une mise à la masse accidentelle peut en effet provoquer une surchauffe de l'équipement et un danger d'incendie. Ne pas enrouler ou passer le câble autour d'une partie quelconque du corps.

f. Vérifiez si le câble de masse est bien relié à la pièce en un point aussi proche que possible de la zone de travail. Le branchement des câbles de masse à l'ossature du bâtiment ou en un point éloigné de la zone de travail augmente en effet le risque de passage d'un courant de sortie par des chaînes de

levage, des câbles de grue ou divers chemins électriques.

g. Empêchez l'apparition de toute humidité, notamment sur vos vêtements, à la surface de l'emplacement de travail, des câbles, du porte-électrode et du poste de soudage/coupage. Réparez immédiatement toute fuite d'eau.

4. VENTILATION-- La respiration prolongée des fumées résultant des opérations de soudage/coupage, à l'intérieur, d'un local clos, peut provoquer des malaises et des dommages corporels. Aussi convient-il d'observer les précautions suivantes:

a. Assurez en permanence une aération adéquate de l'emplacement de travail en maintenant une ventilation naturelle ou à l'aide de moyens mécaniques. N'effectuez jamais de travaux de soudage ou de coupage sur des matériaux de zinc, de plomb, de beryllium ou de cadmium en l'absence de moyens mécaniques de ventilation capables d'empêcher l'inhalation des fumées dégagées par ces matériaux.

b. N'effectuez jamais de travaux de soudage ou de coupage à proximité de vapeurs d'hydrocarbure chloré résultant d'opérations voisines de dégraissage ou de pulvérisation. La chaleur dégagée ou le rayonnement de l'arc peut déclencher la formation de phosgène -- gaz particulièrement toxique -- et d'autres gaz irritants, à partir des vapeurs de solvant.

c. Une irritation momentanée des yeux, du nez ou de la gorge constatée au cours de l'utilisation de l'équipement dénote un défaut de ventilation. Arrêtez-vous de travailler afin de prendre les mesures nécessaires à l'amélioration de la ventilation. Ne poursuivez pas l'opération entreprise si le malaise persiste.

d. Certaines commandes comportent des canalisations où circule de l'hydrogène. L'armoire de commande est munie d'un ventilateur destiné à empêcher la formation de poches d'hydrogène, lesquelles présentent un danger d'explosion; ce ventilateur ne fonctionne que si l'interrupteur correspondant du panneau avant se trouve placé en position ON (Marche). Veillez à manœuvrer cette commande en vérifiant si le couvercle est bien en place, de façon à assurer l'efficacité de la ventilation ainsi réalisée. Ne jamais débrancher le ventilateur.

e. Les fumées produites par l'opération de soudage ou de coupage peuvent s'avérer toxiques. Aussi est-il nécessaire de disposer en permanence d'un dispositif adéquat de ventilation de type aspirant, afin d'éliminer du voisinage de l'opérateur tout dégagement de fumée visible.

f. Consultez les recommandations particulières en matière de ventilation indiquées à l'alinéa 6 de la norme Z49.1 de l'AWS.

5. ENTRETIEN DE L'ÉQUIPEMENT-- Un équipement entretenu de façon défectueuse ou inadéquate risque non seulement de réaliser un travail de mauvaise qualité mais, chose plus grave encore, d'entraîner des dommages corporels graves, voire mortels en déclenchant des incendies ou des chocs électriques. Observez par conséquent les précautions suivantes:

a. Efforcez-vous de toujours confier à un personnel qualifié l'installation, le dépannage et l'entretien du poste de soudage et de coupage. N'effectuez aucune réparation électrique sur l'équipement à moins d'être qua-lifié à cet effet.

b. Ne procédez jamais à une tâche d'entretien quelconque à l'intérieur du poste de soudage/coupage, avant d'avoir débranché l'alimentation électrique.

c. Maintenez en bon état de fonctionnement les câbles, le câble de masse, les branchements, le cordon d'alimentation et le poste de soudage/coupage. N'utilisez jamais le poste ou l'équipement s'il présente une défectuosité quelconque.

d. Prenez soin du poste de soudage et de coupage et des équipements accessoires. Gardez-les à l'écart des sources de charleur, notamment des fours, de l'humidité, des flaques d'eau maintenez-les à l'abri des traces d'huile ou de graisse, des atmosphères corrosives et des intempéries.

e. Laissez en place tous les dispositifs de sécurité et tous les panneaux de l'armoire de commande en veillant à les garder en bon état.

f. Utilisez le poste de soudage/coupage conformément à son usage prévu et n'effectuez aucune modification.

6. INFORMATIONS COMPLÉMENTAIRES RELATIVES À LA SÉCURITÉ--

Pour obtenir des informations complémentaires sur les règles de sécurité à observer pour le montage et l'utilisation d'équipements de soudage et de coupage électriques et sur les méthodes de travail recommandées, demandez un exemplaire du livret N° 52529 "Precautions and Safe Practices for Arc Welding, Cutting and Gouging" publié par ESAB. Nous conseillons également de consulter les publications sui-vantes, tenues à votre disposition par l'American Welding Society, 550 N.W. LeJuene Road, Miami, FL 32126:

a. "Safety in Welding and Cutting" AWS Z49.1

b. "Recommended Safe Practices for Gas-Shielded Arc Welding "AWS A6. 1.

c. "Safe Practices for Welding and Cutting Containers That Have Held Combustibles" AWS-A6.0.

d. "Recommended Safe Practices for Plasma Arc Cutting" AWS-A6. 3.

e. "Recommended Safe Practices for Plasma Arc Welding" AWS-C5. 1.

f. "Recommended Safe Practices for Air Carbon Arc Gouging and Cutting" AWS-C5. 3.

g. "Code For Safety in Welding and Cutting" CSA-Standard W117. 2.

PRECAUCION DE SEGURIDAD

ADVERTENCIA: Estas Precauciones de Seguridad son para su protección. Ellas hacen resumen de información proveniente de las referencias listadas en la sección "Información Adicional Sobre La Seguridad". Antes de hacer cualquier instalación o procedimiento de operación , asegúrese de leer y seguir las precauciones de seguridad listadas a continuación así como también todo manual, hoja de datos de seguridad del material, calcomanias, etc. El no observar las Precauciones de Seguridad puede resultar en daño a la persona o muerte.

PROTEJASE USTED Y A LOS DEMAS-- Algunos procesos de soldadura, corte y ranurado son ruidosos y requiren protección para los oídos. El arco, como el sol , emite rayos ultravioleta (UV) y otras radiaciones que pueden dañar la piel y los ojos. El metal caliente causa quemaduras. EL entrenamiento en el uso propio de los equipos y sus procesos es esencial para prevenir accidentes. Por lo tanto:

1. Utilice gafas de seguridad con protección a los lados siempre que esté en el área de trabajo, aún cuando esté usando careta de soldar, protector para su cara u otro tipo de protección.
2. Use una careta que tenga el filtro correcto y lente para proteger sus ojos, cara, cuello, y oídos de las chispas y rayos del arco cuando se esté operando y observando las operaciones. Alerte a todas las personas cercanas de no mirar el arco y no exponerse a los rayos del arco eléctrico o el metal fundido.
3. Use guantes de cuero a prueba de fuego, camisa pesada de mangas largas, pantalón de ruedo liso, zapato alto al tobillo, y careta de soldar con capucha para el pelo, para proteger el cuerpo de los rayos y chispas calientes provenientes del metal fundido. En ocaciones un delantal a prueba de fuego es necesario para protegerse del calor radiado y las chispas.
4. Chispas y partículas de metal caliente puede alojarse en las mangas enrolladas de la camisa , el ruedo del pantalón o los bolsillos. Mangas y cuellos deberán mantenerse abotonados, bolsillos al frente de la camisa deberán ser cerrados o eliminados.
5. Proteja a otras personas de los rayos del arco y chispas calientes con una cortina adecuada no-flamable como división.
6. Use careta protectora además de sus gafas de seguridad cuando esté removiendo escoria o puliendo. La escoria puede estar caliente y desprenderse con velocidad. Personas cercanas deberán usar gafas de seguridad y careta protectora.

FUEGO Y EXPLOSIONES -- El calor de las flamas y el arco pueden ocacionar fuegos. Escoria caliente y las chispas pueden causar fuegos y explosiones. Por lo tanto:

1. Remueva todo material combustible lejos del área de trabajo o cubra los materiales con una cobija a prueba de fuego. Materiales combustibles incluyen madera, ropa, líquidos y gases flamables, solventes, pinturas, papel, etc.
2. Chispas y partículas de metal pueden introducirse en las grietas y agujeros de pisos y paredes causando fuegos escondidos en otros niveles o espacios. Asegúrese de que toda grieta y agujero esté cubierto para proteger lugares adyacentes contra fuegos.
3. No corte, suelde o haga cualquier otro trabajo relacionado hasta que la pieza de trabajo esté totalmente limpia y libre de substancias que puedan producir gases inflamables o vapores tóxicos. No trabaje dentro o fuera de contenedores o tanques cerrados. Estos pueden explotar si contienen vapores inflamables.
4. Tenga siempre a la mano equipo extintor de fuego para uso instantáneo, como por ejemplo una manguera con agua, cubeta con agua, cubeta con arena, o extintor portátil. Asegúrese que usted esta entrenado para su uso.
5. No use el equipo fuera de su rango de operación. Por ejemplo, el calor causado por cable sobrecarga en los cables de soldar pueden ocasionar un fuego.
6. Después de termirar la operación del equipo, inspeccione el área de trabajo para cerciorarse de que las chispas o metal caliente ocasionen un fuego más tarde. Tenga personal asignado para vigilar si es necesario.
7. Para información adicional , haga referencia a la publicación NFPA Standard 51B, "Fire Prevention in Use of Cutting and Welding Processes", disponible a través de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

CHOQUE ELECTRICO -- El contacto con las partes eléctricas energizadas y tierra puede causar daño severo o muerte. NO use soldadura de corriente alterna (AC) en áreas húmedas, de movimiento confinado en lugares estrechos o si hay posibilidad de caer al suelo.

1. Asegúrese de que el chasis de la fuente de poder esté conectado a tierra através del sistema de electricidad primario.
2. Conecte la pieza de trabajo a un buen sistema de tierra física.
3. Conecte el cable de retorno a la pieza de trabajo. Cables y conductores expuestos o con malas conexiones pueden exponer al operador u otras personas a un choque eléctrico fatal.
4. Use el equipo solamente si está en buenas condiciones. Reemplaze cables rotos, dañados o con conductores expuestos.
5. Mantenga todo seco, incluyendo su ropa, el área de trabajo, los cables, antorchas, pinza del electrodo, y la fuente de poder.
6. Asegúrese que todas las partes de su cuerpo están insuladas de ambos, la pieza de trabajo y tierra.
7. No se pare directamente sobre metal o tierra mientras trabaja en lugares estrechos o áreas húmedas; trabaje sobre un pedazo de madera seco o una plataforma insulada y use zapatos con suela de goma.
8. Use guantes secos y sin agujeros antes de energizar el equipo.
9. Apage el equipo antes de quitarse sus guantes.
10. Use como referencia la publicación ANSI/ASC Standard Z49.1 (listado en la próxima página) para recomendaciones específicas de como conectar el equipo a tierra. No confunda el cable de soldar a la pieza de trabajo con el cable a tierra.

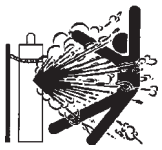
CAMPOS ELECTRICOS Y MAGNETICOS - Son peligrosos. La corriente eléctrica fluye através de cualquier conductor causando a nivel local Campos Eléctricos y Magnéticos (EMF). Las corrientes en el área de corte y soldadura, crean EMF alrrededor de los cables de soldar y las maquinas. Por lo tanto:

1. Soldadores u Operadores que use marca-pasos para el corazón deberán consultar a su médico antes de soldar. El Campo Electromagnético (EMF) puede interferir con algunos marca-pasos.
2. Exponerse a campos electromagnéticos (EMF) puede causar otros efectos de salud aún desconocidos.
3. Los soldadores deberán usar los siguientes procedimientos para minimizar exponerse al EMF:
   A. Mantenga el electrodo y el cable a la pieza de trabajo juntos, hasta llegar a la pieza que usted quiere soldar. Asegúrelos uno junto al otro con cinta adhesiva cuando sea posible.
   B. Nunca envuelva los cables de soldar alrededor de su cuerpo.
   C. Nunca ubique su cuerpo entre la antorcha y el cable, a la pieza de trabajo. Mantega los cables a un sólo lado de su cuerpo.
   D. Conecte el cable de trabajo a la pieza de trabajo lo más cercano posible al área de la soldadura.
   E. Mantenga la fuente de poder y los cables de soldar lo más lejos posible de su cuerpo.

HUMO Y GASES -- El humo y los gases, pueden causar malestar o daño, particularmente en espacios sin ventilación. No inhale el humo o gases. El gas de protección puede causar falta de oxígeno.

Por lo tanto:

1. Siempre provea ventilación adecuada en el área de trabajo por medio natural o mecánico. No solde, corte, o ranure materiales con hierro galvanizado, acero inoxidable, cobre, zinc, plomo, berílio, o cadmio a menos que provea ventilación mecánica positiva . No respire los gases producidos por estos materiales.
2. No opere cerca de lugares donde se aplique substancias químicas en aerosol. El calor de los rayos del arco pueden reaccionar con los vapores de hidrocarburo clorinado para formar un fosfógeno, o gas tóxico, y otros irritant es.
3. Si momentáneamente desarrolla inrritación de ojos, nariz o garganta mientras est á operando, es indicación de que la ventilación no es apropiada. Pare de trabajar y tome las medidas necesarias para mejorar la ventilación en el área de trabajo. No continúe operando si el malestar físico persiste.
4. Haga referencia a la publicación ANSI/ASC Standard Z49.1 (Vea la lista a continuación) para recomendaciones específicas en la ventilación.
5. **ADVERTENCIA-- Este producto cuando se utiliza para soldaduras o cortes, produce humos o gases, los cuales contienen químicos conocidos por el Estado de California de causar defectos en el nacimiento, o en algunos casos, Cancer. (California Health & Safety Code §25249.5 et seq.)**



MANEJO DE CILINDROS-- Los cilindros, si no son manejados correctamente, pueden romperse y liberar violentamente gases. Rotura repentina del cilindro, válvula, o válvula de escape puede causar daño o muerte. Por lo tanto:

1. Utilize el gas apropiado para el proceso y utilize un regulador diseñado para operar y reducir la presión del cilindro de gas . No utilice adaptadores. Mantenga las mangueras y las conexiones en buenas condiciones. Observe las instrucciones de operación del manufacturero para montar el regulador en el cilindro de gas comprimido.
2. Asegure siempre los cilindros en posición vertical y amárrelos con una correa o cadena adecuada para asegurar el cilindro al carro, transportes, tablilleros, paredes, postes, o armazón. Nunca asegure los cilindros a la mesa de trabajo o las piezas que son parte del circuito de soldadura . Este puede ser parte del circuito elélectrico.
3. Cuando el cilindro no está en uso, mantenga la válvula del cilindro cerrada. Ponga el capote de protección sobre la válvula si el regulador no está conectado. Asegure y mueva los cilindros utilizando un carro o transporte adecuado. Evite el manejo brusco de los

MANTENIMIENTO DEL EQUIPO -- Equipo defectuoso o mal mantenido puede causar daño o muerte. Por lo tanto:

1. Siempre tenga personal cualificado para efectuar l a instalación, diagnóstico, y mantenimiento del equipo. No ejecute ningún trabajo eléctrico a menos que usted esté cualificado para hacer el trabajo.
2. Antes de dar mantenimiento en el interior de la fuente de poder, desconecte la fuente de poder del suministro de electricidad primaria.
3. Mantenga los cables, cable a tierra, conexciones, cable primario, y cualquier otra fuente de poder en buen estado operacional. No opere ningún equipo en malas condiciones.
4. No abuse del equipo y sus accesorios. Mantenga el equipo lejos de cosas que generen calor como hornos, también lugares húmedos como charcos de agua , aceite o grasa, atmósferas corrosivas y las inclemencias del tiempo.
5. Mantenga todos los artículos de seguridad y coverturas del equipo en su posición y en buenas condiciones.
6. Use el equipo sólo para el propósito que fue diseñado. No modifique el equipo en ninguna manera.

INFORMACION ADICIONAL DE SEGURIDAD -- Para más información sobre las prácticas de seguridad de los equipos de arco eléctrico para soldar y cortar, pregunte a su suplidor por una copia de "Precautions and Safe Practices for Arc Welding, Cutting and Gouging-Form 52-529.

Las siguientes publicaciones, disponibles através de la American Welding Society, 550 N.W. LeJuene Road, Miami, FL 33126, son recomendadas para usted:

1. ANSI/ASC Z49.1 - "Safety in Welding and Cutting"
2. AWS C5.1 - "Recommended Practices for Plasma Arc Welding"
3. AWS C5.2 - "Recommended Practices for Plasma Arc Cutting"
4. AWS C5.3 - "Recommended Practices for Air Carbon Arc Gouging and Cutting"
5. AWS C5.5 - "Recommended Practices for Gas Tungsten Arc Welding"
6. AWS C5.6 - "Recommended Practices for Gas Metal Arc Welding""
7. AWS SP - "Safe Practices" - Reprint, Welding Handbook.
8. ANSI/AWS F4.1, "Recommended Safe Practices for Welding and Cutting of Containers That Have Held Hazardous Substances."

SIGNIFICADO DE LOS SIMBOLOS -- Según usted avanza en la lectura de este folleto: Los Símbolos Significan ¡Atención! ¡Esté Alerta! Se trata de su seguridad.

PELIGRO — **Significa riesgo inmediato que, de no ser evadido, puede resultar inmediatamente en serio daño personal o la muerte.**

ADVERTENCIA — **Significa el riesgo de un peligro potencial que puede resultar en serio daño personal o la muerte.**

CUIDADO — **Significa el posible riesgo que puede resultar en menores daños a la persona.**

SECTION 1 DESCRIPTION

1.1 GENERAL

The ESAB 350mpi is a high performance constant voltage (CV) and constant current (CC) inverter power source designed to provide multi-process welding capabilities with dependability and ease of use. The ESAB 350mpi is a self-contained unit which will produce power for Gas Metal Arc (MIG), Gas Tungsten Arc (TIG) and Shielded Metal Arc (Stick) welding without the use of optional apparatus.

For MIG (CV) welding, the ESAB 350mpi supports welding a wide selection of ferrous and non-ferrous alloys by utilizing Fixed Slope and inductance controls.

A special "Touch Tig" circuit eliminates the need for high frequency or "scratch" starting when using the TIG (CC) welding process. This feature provides smooth starts without contaminating the electrode or the work.

The Stick (CC) welding mode provides adequate open circuit voltage (70 V dc) for easy starts and re-starts as well as an adjustable arc force which controls arc penetration and wetting action.

The "Auto Fan" feature operates the cooling fan only when the contactor is energized or when the internal temperature exceeds the safe operating level. During normal operation, the fan shuts down about 5 minutes after the contactor disengages.

1.2 DUTY CYCLE

The ESAB 350mpi power source will operate on a 60% duty cycle with a load of 350 amperes at 34 V dc (with 3-phase input). Duty cycle is defined as the ratio of operating time to total time. Ratings are based on a 10-minute cycle. The 60% duty cycle rating means that the 350 ampere, 34 volt rated load can be applied for a total of 6 minutes and shut off for a total of 4 minutes in a 10-minute period. If the welding current (or voltage) is reduced, the duty cycle increases. Conversely, if the welding current (or voltage) is increased, the duty cycle will decrease. Refer to Table 1-1 and Figure 1-2.

1.3 VOLT-AMPERE CURVES

Figure 1-2 illustrates the static volt-ampere characteristics for the power source in the MIG (CV), TIG (CC), and Stick (CC) modes. The slant of these curves is referred to as the slope and is generally defined as the voltage drop per 100 amperes of current rise. These curves show the output voltage available at any given output current between the minimum and maximum settings of the output control. Values for other settings fall between the minimum and maximum curves.

Table 1-1. Technical Specifications

RATED OUTPUT		
100% Duty Cycle (3-phase input) 100% Duty Cycle (1-phase input) 60% Duty cycle (3-phase input) Open-circuit Voltage (max)		300 A @ 32 V dc 225 A @ 29 V dc 350 A @ 34 V dc 70 V dc
PHYSICAL		
Height Width Depth Weight		16.4 in. (417 mm) 11.5 in. (292 mm) 29.8 in. (757 mm) 101 lbs (39 kg)
INPUT VOLTAGE AND CURRENT @ RATED 60% DUTY CYCLE LOAD		
230/460 V ac models	3-phase 1-phase	50/25 amps 50/38

NOTE:

These measurements are made at the output terminals of the power source. Additional voltage "drops" will occur in the welding cable, torch cable, and in the workpiece. The use of proper size welding cable and secure electrical connections for the electrode and ground circuits will minimize these effects which adversely affect welding conditions and waste electrical energy.

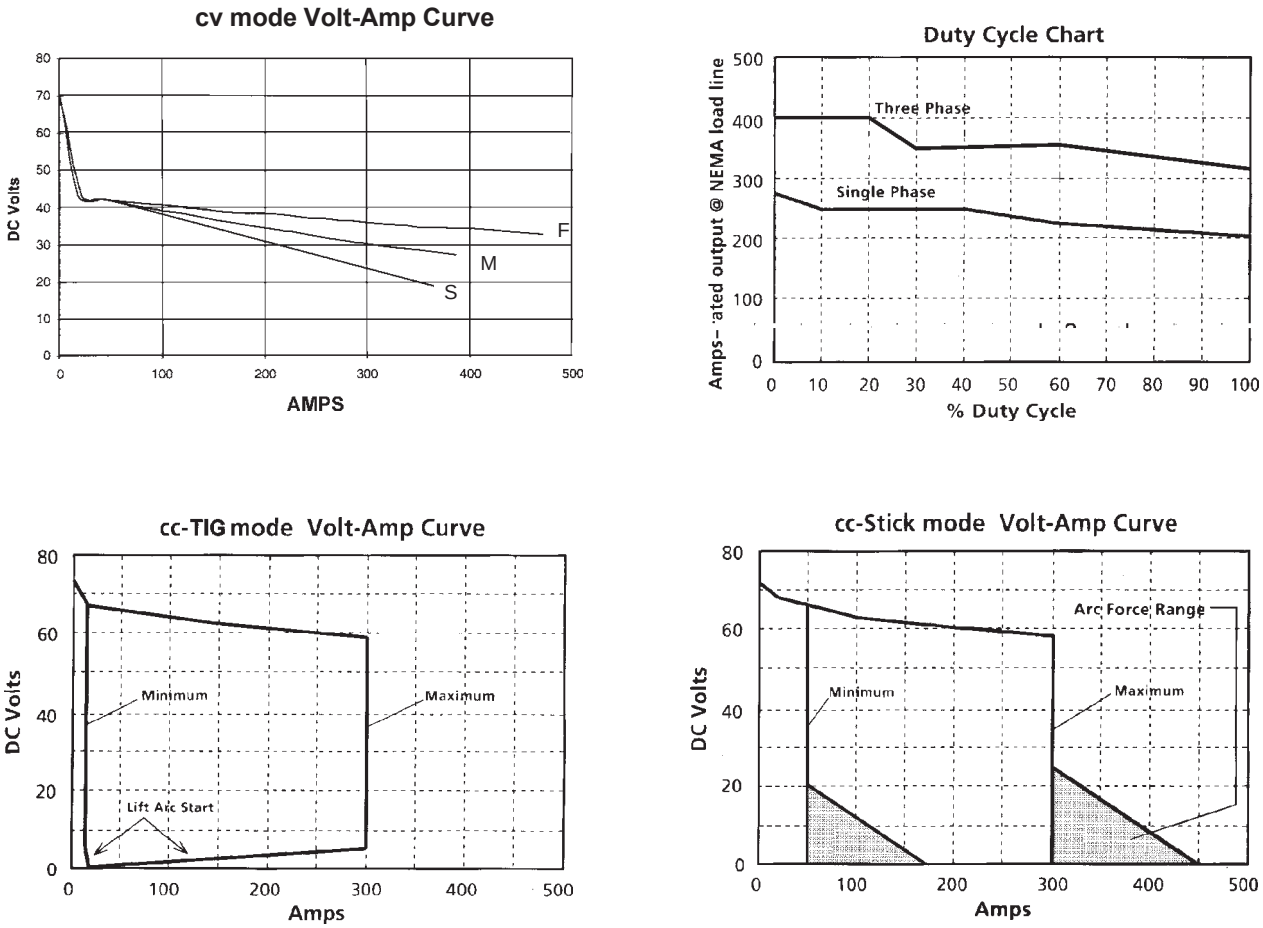


Figure 1-2. Volt-Ampere Characteristics and Duty Cycles

SECTION 2 INSTALLATION

2.1 GENERAL

This section provides detailed instructions for the proper installation of the ESAB 350mpi power source from initial receipt of the equipment to output welding connections. It is recommended that these instructions be followed carefully to allow for the best possible operating environment.

2.2 REQUIRED TOOLS

Some procedures require use of the following tools: 3/8" wrench, Phillips or Robertson, and a screwdriver. The use of socket wrenches or nutdrivers are recommended over straight wrenches due to the location of attaching hardware.

2.3 UNPACKING AND PLACEMENT

NOTE

When lifting the ESAB 350mpi, apply direct upward pressure to both of the carrying handles. **Do not** transport the ESAB 350mpi with only one handle or apply outward pressure to the handles. See Figure 2-1.

A. Immediately upon receipt of the ESAB 350mpi, inspect for damage which may have occurred in transit. Notify the carrier of any defects or damage at once.
B. After removing the components from the shipping container(s), check the container for any loose parts. Remove all packing materials.
C. Check air passages of power source for any packing materials that may obstruct air flow through the power source.
D. If the equipment is not to be installed immediately, store it in a clean, dry, well-ventilated area.

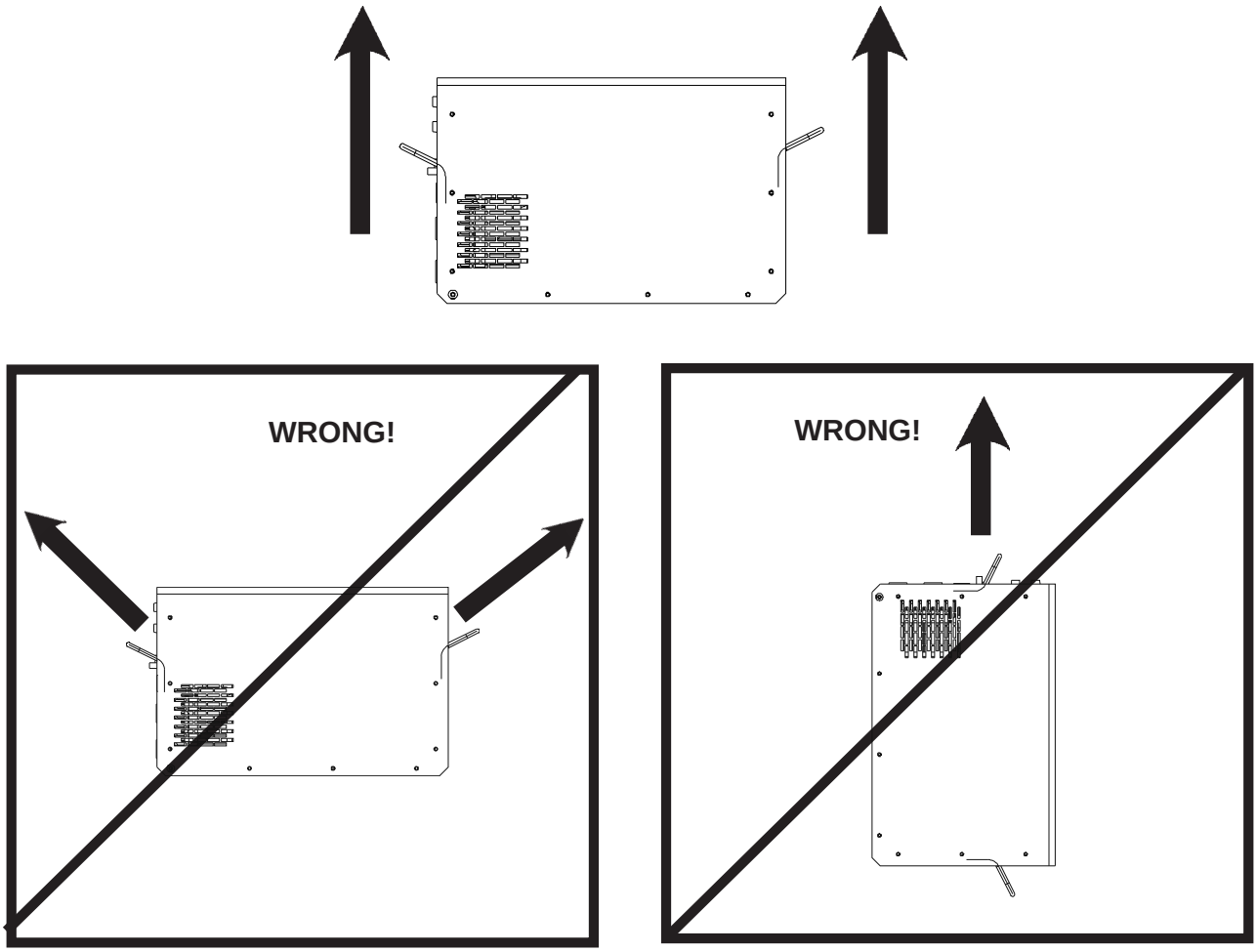


Figure 2-1. Correct and Wrong Lifting Techniques

E. The location of the power source should be carefully selected to ensure satisfactory and dependable service. Choose a location relatively close to a properly fused source of electrical power.

F. The machine components are maintained at proper operating temperatures by forced air which is drawn through the cabinet by the fan unit. For this reason, it is important that the machine be located in an open area where air can circulate freely at front and rear openings. If space is at a premium, leave at least 1 foot (300 mm) of clearance between the rear of the power source and wall or other obstruction. The area around the unit should be relatively free of dust, fumes, and excessive heat. It is also desirable to locate the unit so the cover can be removed easily for cleaning and maintenance.

2.4 INPUT CONNECTIONS

ELECTRIC SHOCK CAN KILL! Precautionary measures should be taken to provide maximum protection against electrical shock.

Be sure that all power is OFF by opening the line (wall) disconnect switch when primary electrical connections are made to the power source.

To be doubly safe, check your input leads with a voltmeter to make sure all power is OFF.

2.4.1 230/460V Model

NOTE

As shipped from the factory, the ESAB 350mpi, 230/460 V model, is set for 460 volts input. If you will be operating the machine from a 230 V source, open the switch access panel on the rear panel on the machine and flip the Voltage Selector Switch to the 230 V position.

2.4.2 575V Model

575 Vac input models are single voltage units and therefore do not require any installation preparation for input line voltage.

2.4.3 400/440V Model

NOTE

As shipped from the factory, the ESAB 350mpi, 400/440 V model, is set for 440 volts input. If you will be operating the machine from a 400 V source, open the switch access panel on the rear panel on the machine and flip the Voltage Selector Switch to the 400 V position.

The ESAB 350mpi is designed to compensate for line voltage variations of plus or minus 10 percent from the rated level while maintaining rated output, without damage to internal components. If line voltage fluctuations exceed this range, serious damage could occur. Therefore, prior to installation, it is recommended that the line voltage of the supply circuit be measured at several times during the day. If fluctuations beyond the +/-10% level are detected, another supply circuit should be selected, or the local power company should be asked to adjust the supply. In addition, certain types of factory equipment can cause rapid voltage swings (transients) which can cause the ESAB 350mpi safety circuits to "trip". Examples of such equipment are resistance welders, punch presses, and starting of large electric motors.

Input Power Cable (Figure 2-3). Before installing the power cable, make sure there is a line (wall) disconnect switch with fuses or circuit breakers at the main power panel. You may either use the factory-installed input power cable (No. 8 AWG, 4/c, type SO (90 °C), 12 ft (3.7 m) length) or provide your own input power leads. If you choose to provide your own, make sure they are insulated copper conductors. You must have two (single-phase) or three (three-phase) power leads and one ground wire. The wires may be heavy rubber covered cable or may be run in a solid or flexible conduit. Refer to Table 2-1 for recommended input conductors and line fuse sizes.

Table 2-1. Recommended Input Conductors and Fuse Sizes

Rated Load (3-phase input) Volts	Amps	Input & Ground Conductor* CU/AWG (mm)	Time-Delay Fuse Size Amps
208	40	8 (10)	60
230	38	8 (10)	60
460	21	10 (6)	30
575	17	10 (6)	30

* Sizes per National Electric Code for 90 °C rated copper conductors @ 30 °C ambient. Not more than three conductors in raceway or cable. Local codes should be followed if they specify larger sizes other than those listed above.

Use the following procedure to disconnect the factory-installed cable and connect your own input power leads/cable.

ELECTRIC SHOCK CAN KILL! Make sure the ground lead is at least twice as long as the input power leads on the inside of the power source (see Figure 2-3). Ensure the strain relief and ground connection are securely tightened.

If these conditions are not met, the power source chassis may become electrically "hot" if excessive stress is placed on the input power cable.

If it is necessary to move the power source after it has been connected to primary power, ensure that the power source is turned OFF, and that an adequate amount of "slack" is maintained in the input power cable.

If you have single-phase input power and are using the factory-installed power cable, you must change the ON-OFF switch cable connections from three-phase to single-phase configuration as follows:

1. Remove the 1/4" screws securing the top cover and place them in a safe place.
2. Remove the top cover and set aside.
3. Loosen the ON-OFF switch cable connection T3 located inside the power source.
4. Remove the red wire from cable connection T3.

ELECTRIC SHOCK CAN KILL! After the red wire has been removed from L2, its center conductor is exposed. This conductor must be covered with an insulating material. Failure to do so properly could cause a serious electrical shock hazard.

5. Re-attach the top cover with hardware removed in step 1.

2.5 OUTPUT CONNECTIONS

ELECTRIC SHOCK CAN KILL! Before making any connections to the power source output terminals, make sure that all primary power input power is deenergized (OFF) at the line (wall) disconnect switch or circuit breaker.

Two male plug connectors (P/N 13792513) are supplied with the ESAB 350mpi (see Figure 2-3). To assemble the connectors onto each of your welding cables, refer to the following instructions:

1. Slip the insulating boot over the end of the cable.
2. Strip the wire approximately 1-1/2" (37 mm) from the end.
3. Place the ferrule over the stripped wire end.
4. Place the male connector over the ferrule and tighten the two Allen screws until they are flush with the connector.
5. Slide the insulating boot over the assembly.

Refer to Tables 2-2 and 2-3 and Figures 2-4, 2-5, 2-6, and 2-7 when attaching welding cables and optional equipment to the ESAB 350mpi.

Particular attention should be paid to the electrical resistance in the welding circuit; especially, the work and work cable and when using a water-cooled torch. High resistance in the welding circuit can cause performance deterioration (loss of "heat" input, popping of weld puddle, bushy arcs, etc.). It is recommended that the power source/wire feeder and workpiece be placed

as close together as possible to limit this resistance. Make sure that the work cable (ground) is large enough, kept as short as possible, properly insulated, securely connected to the workpiece, and that all connections are clean and tightly secured. If the work circuit includes mechanical fixtures, ship structure, robot fixtures, etc., make sure that the circuit is secure and presents a low resistance path to the flow of weld current. Also, the power cable on a water-cooled torch is normally subject to gradual deterioration and increasing resistance due to corrosion which leads to the poor performance described above. To assure good torch performance, the water-cooled power cable should be replaced periodically.

Table 2-2. Typical Output Connections

	MIG Welding (DCRP)	TIG Welding (DCSP)	Stick Welding (DCSP or DCRP)
Electrode	positive (+)	negative (-)	positive (+) DCRP negative (-) DCSP
Work	negative (-)	positive (+)	negative (-) DCRP positive (+) DCSP

Table 2-3. Recommended Welding Cable Sizes - AWG (mm^2)

Welding Current	Total Length (Feet) of Cable in Welding Circuit*				
	50 (13 m)	100 (25 m)	150 (38 m)	200 (51 m)	250 (64 m)
100	6 (16)**	4 (25)**	3 (30)**	2 (35)	1 (50)
150	4 (25)**	3 (30)**	1 (50)	1/0 (50)	2/0 (70)
200	3 (30)**	1 (50)	1/0 (50)	2/0 (70)	3/0 (95)
250	2 (35)	1/0 (50)	2/0 (70)	3/0 (95)	4/0 (120)
300	1 (50)	2/0 (70)	3/0 (95)	4/0 (120)	4/0 (120)

* Total cable length includes work and electrode cables. Cable size is based on direct current, insulated copper conductors, 100% duty cycle, and a voltage drop of 4 or less volts. The welding cable insulation must have a voltage rating that is high enough to withstand the open circuit voltage of the machine.

** The supplied male output connectors will not accept anything smaller than #2 gauge (35 mm) cable.

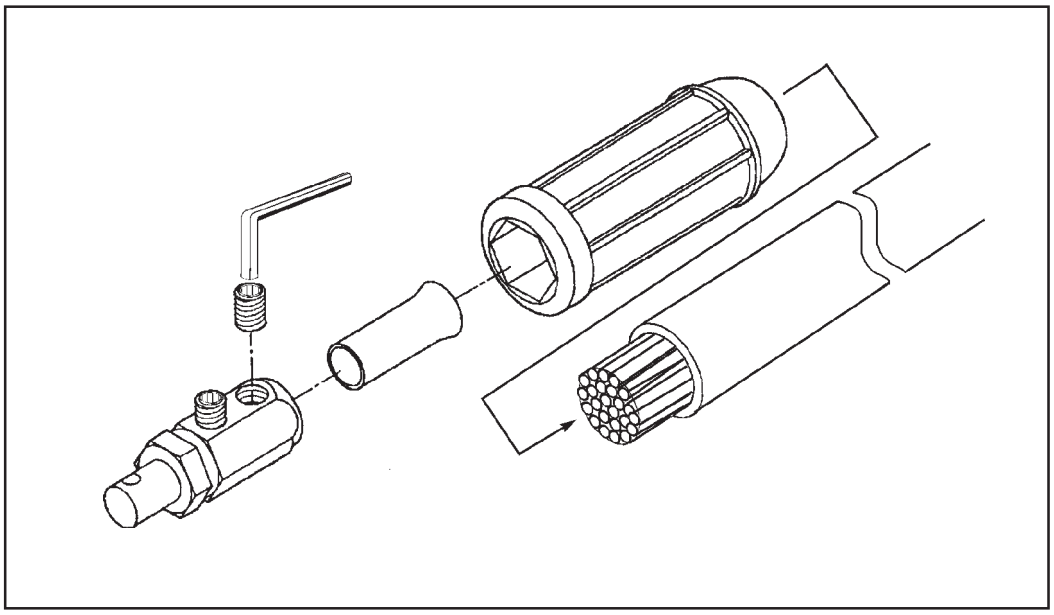


Figure 2-4. Male Output Cable Connectors (P/N 13792513)

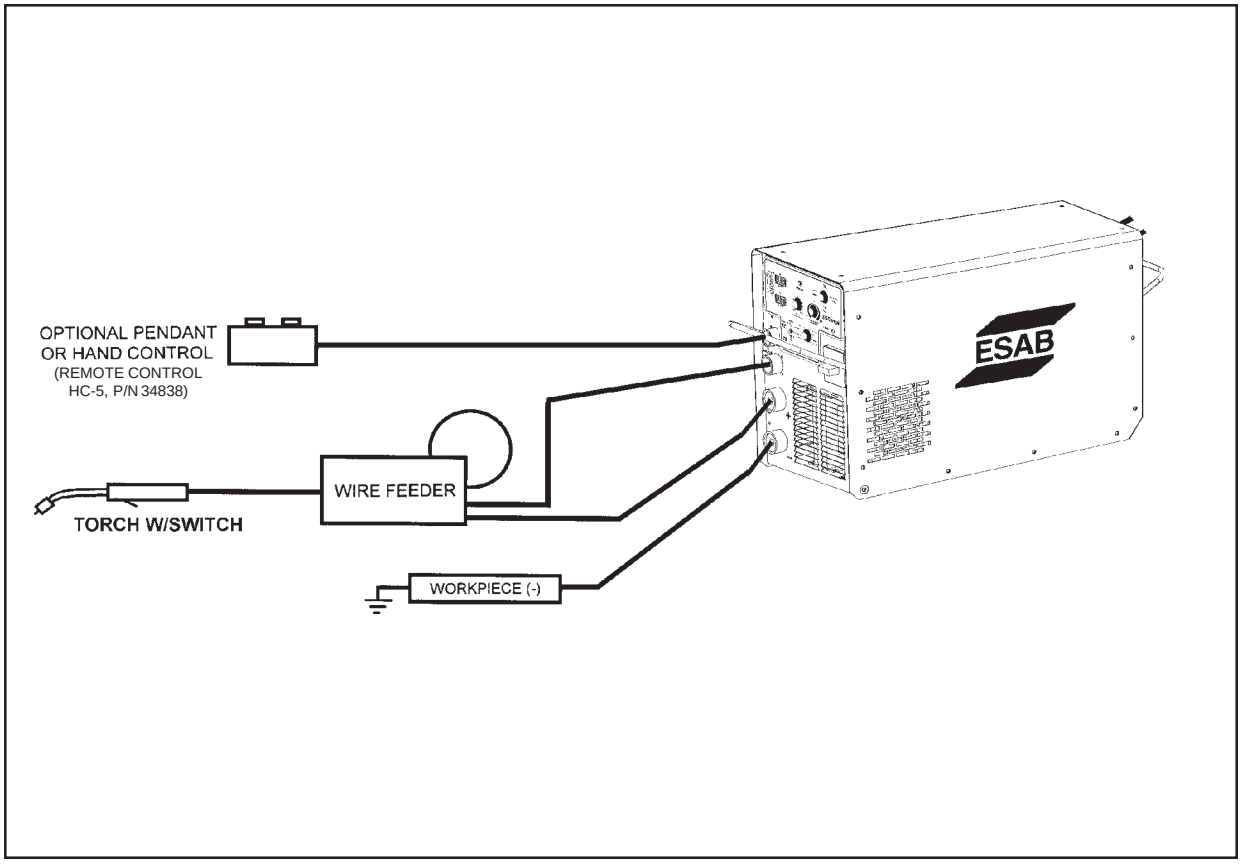


Figure 2-5. MIG (GMAW) Interconnection Diagram

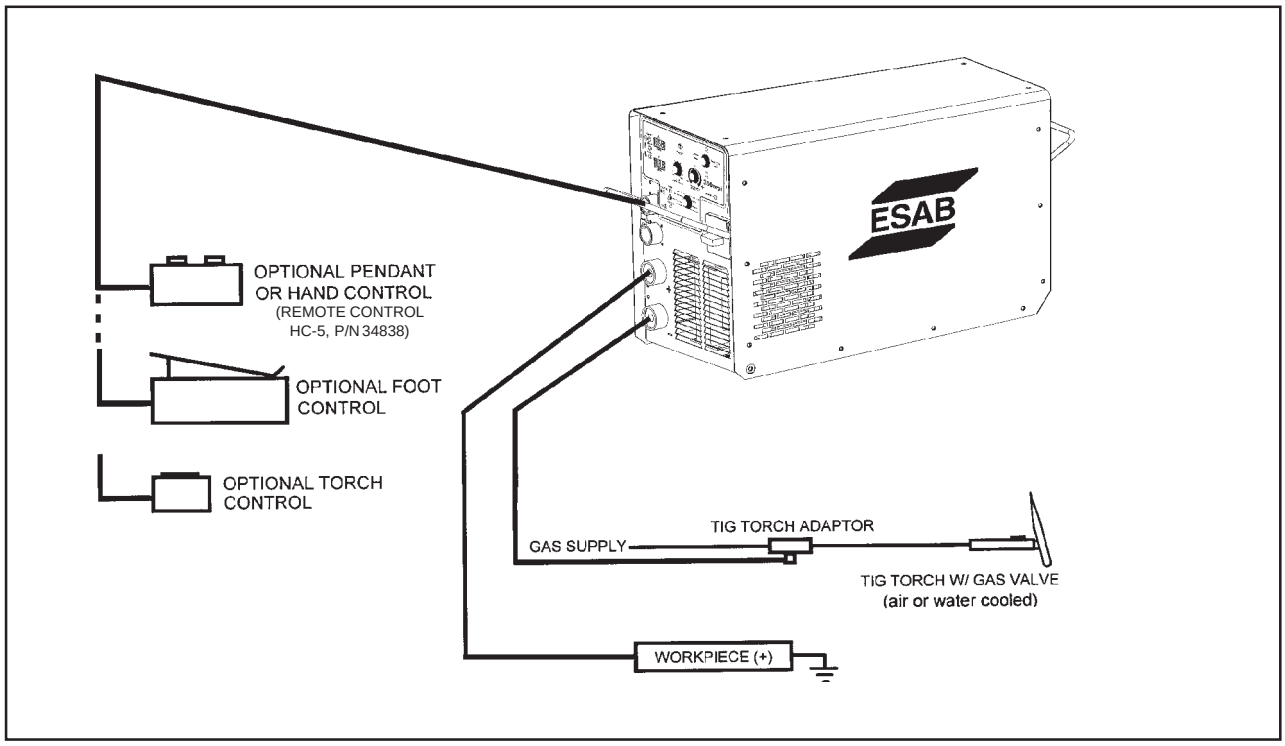


Figure 2-6. TIG (GTAW) Interconnection Diagram

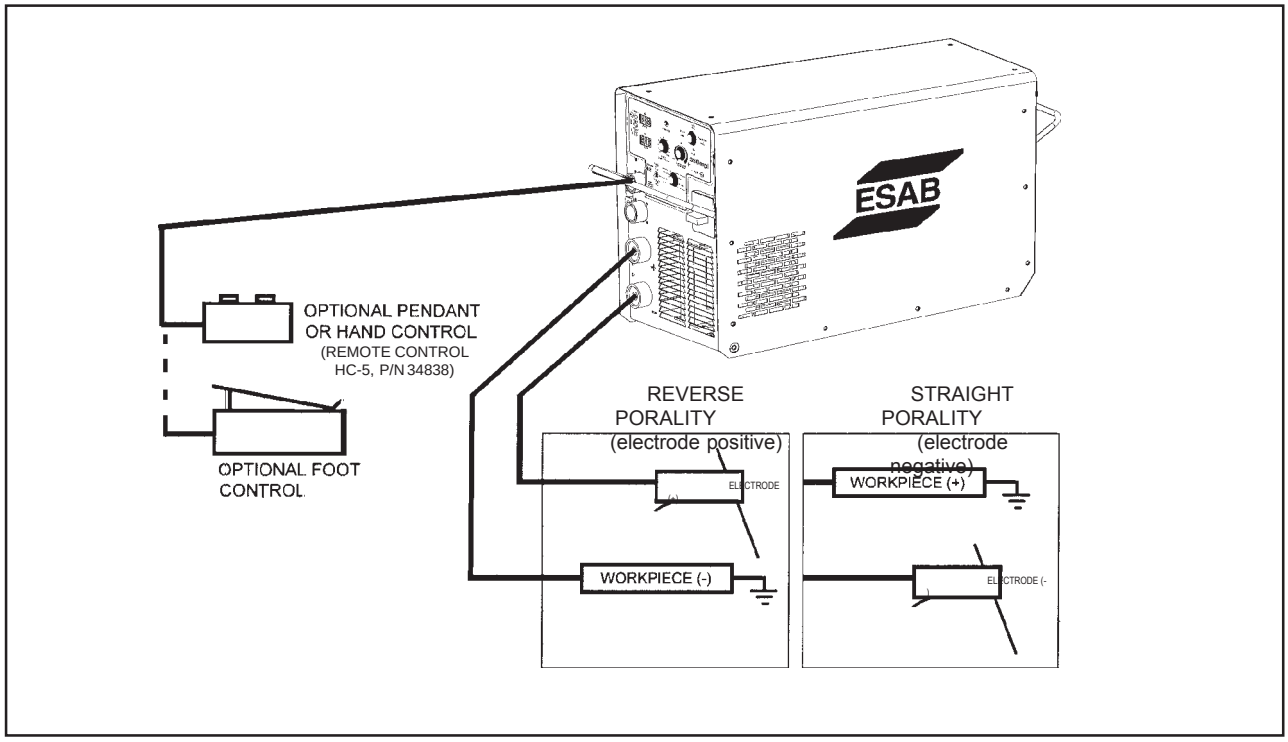


Figure 2-7. Stick (SMAW) Interconnection Diagram

3.1 GENERAL

WARNING

Never, under any circumstances, operate the power source with the cover removed. In addition to the safety hazard, improper cooling may cause damage to internal components.

WARNING

To prevent serious injury, never touch any torch parts forward of the handle (nozzle, electrode, etc.) unless the power switch is in the off position.

Wear proper protective gloves, clothing, safety glasses, and helmet. A helmet with filter lens shade No. 11-14 should provide adequate protection for your eyes. Refer to the Safety Precautions in the beginning of this manual for additional operating precautions.

3.2 WELDING CONTROLS / INDICATORS (FIGURE 3-1)

A. WIRE FEEDER RECEPTACLE - For connecting ESAB 42 & 115 vac wire feeders.

B. REMOTE RECEPTACLE - For connecting remote output control devices such as hand pendant (HC-5, P/N 34838), foot, and torch controls.

C. PANEL / REMOTE SWITCH - Selects the point of machine control.

1. PANEL position - Machine is controlled by the local front panel controls.
2. REMOTE position - Machine control is switched to the device plugged into the REMOTE RECEPTACLE.

D. APPLICATION SELECT SWITCH - This switch selects specific application characteristics when the PROCESS CONTROL SWITCH is in the MIG position regardless of the PANEL/REMOTE SWITCH position. Each selection fine-tunes the specific arc characteristics to provide superior performance by enhancing stability and reducing spatter.

Selections include:

Steel CO_2	Steel Argon Mix
Stainless Steel	Aluminum
Cored Wires	Spray
Medium Slope	Steep Slope

NOTE: When the PROCESS CONTROL SWITCH is set to the STICK, TIG, or TOUCH TIG modes, the APPLICATION SELECT SWITCH has no effect on the welding output characteristics

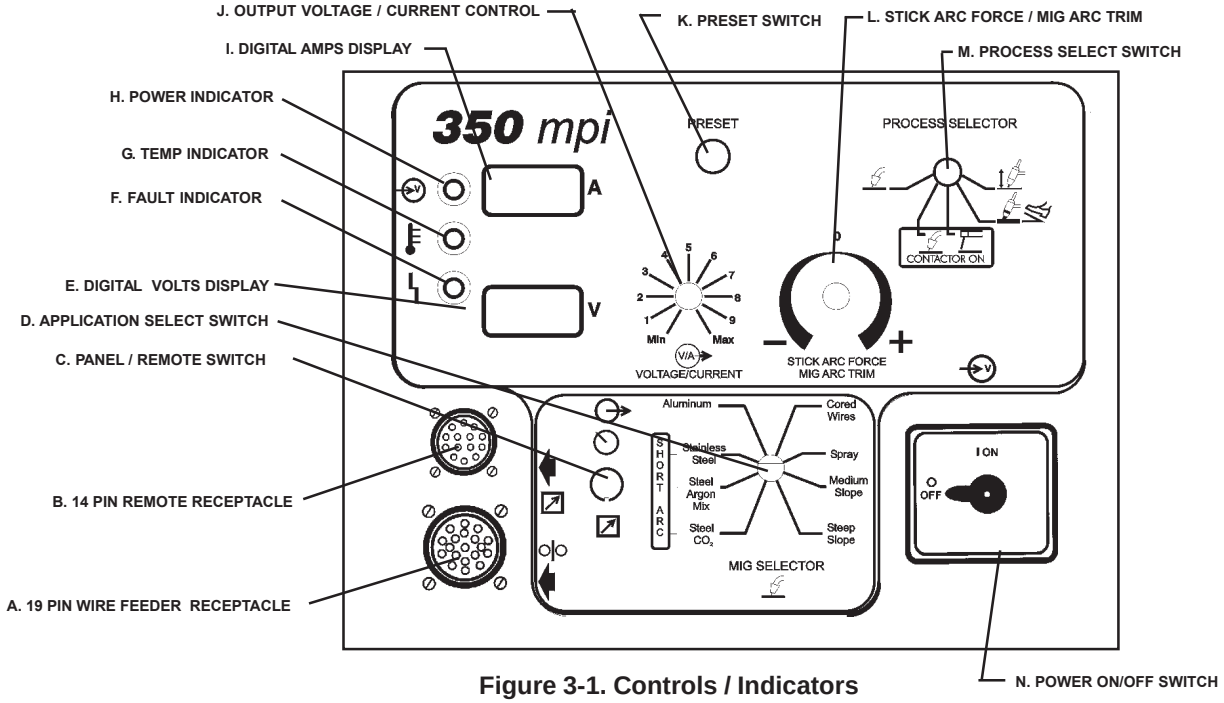


Figure 3-1. Controls / Indicators

E. DIGITAL VOLTS DISPLAY - In the normal mode, this large, easy to read digital display indicates actual output voltage or preset voltage level when the PRESET SWITCH is depressed. If a machine error occurs this display will automatically switch to the error mode and display "Err".

F. FAULT INDICATOR - Indicates an improper input line condition. The machine will not energize. The machine must be reset by turning the POWER “ON/OFF” SWITCH to "OFF" and then back to “ON”, after the proper input voltage is selected.

a. Indicator illuminated - A primary input over-current condition has occurred.
b. Indicator blinking - The INPUT VOLTAGE SELECT SWITCH at the rear of the machine is set incorrectly for the primary input voltage applied.

G. TEMP INDICATOR - Indicates that an over-temperature condition has occurred and the machine will cease to function. "Err 4" will appear in the digital displays. The machine will return to normal operation once the temperature decreases to a safe operating level.

H. POWER INDICATOR - Indicates power is present in the machine and that control circuits are energized.

I. DIGITAL AMPS DISPLAY - In the normal mode, this large, easy to read digital display indicates actual output amperage or preset amperage level when the PRESET SWITCH is depressed. If a machine error occurs this display will automatically switch to the error mode and display the error code number.

J. OUTPUT CURRENT/VOLTAGE CONTROL - Sets the welding power output of the machine. When in the STICK, TIG, and Touch TIG modes, this knob controls the output welding current (amperes). When in the MIG mode, this knob controls the welding voltage (volts).

K. PRESET SWITCH - When depressed, the digital meters will display the adjustment level of the OUTPUT CURRENT/VOLTAGE control. This allows the welder the ability to quickly and easily preset the desired output level before attempting to weld. This greatly reduces the “trail & error” approach to adjusting proper welding conditions.

1. PROCESS SELECT SWITCH in the MIG mode - Depressing the PRESET SWITCH displays the output voltage level in the VOLTS window for the given OUTPUT CONTROL setting.
2. PROCESS SELECT SWITCH in the STICK, TIG, Touch TIG modes - - Depressing the PRESET SWITCH displays the output current level in the AMPS window for the given OUTPUT CONTROL setting.

L. STICK ARC FORCE / MIG ARC TRIM - This control allows the welder to fine tune arc characteristics to suit specific applications and individual preferences.

1. PROCESS SELECT SWITCH in the STICK mode - the STICK ARC FORCE control adjusts the amount of “digging” action when the arc length is shortened. This adjustment is based mostly on personal preference of the welder.

   a. Settings from 0 mid point toward negative (-). The welding arc becomes softer and has less penetrating power as the welding arc length is shortened.
   b. Settings from 0 mid point toward positive (+). The welding arc becomes stiff and has more penetrating power when the arc length is held short.

2. PROCESS SELECT SWITCH in the MIG mode - the MIG ARC TRIM control adjusts the arc dynamic characteristics primarily for short arc welding. This adjustment is based mostly on personal preference of the welder.

   a. Settings from 0 mid point toward negative (-). The welding arc becomes crisp with a higher buzzing sound. The weld pool becomes less fluid and the weld bead may become more crowned.
   b. Settings from 0 mid point toward positive (+).The welding arc becomes softer with a more crackling sound. The weld pool becomes more fluid and the weld bead may be flatter.

M. PROCESS SELECT SWITCH - Selects the desired welding process to be performed. Switch selections and associated process are as follows:

Mig Position	- Output is always energized
Contactor on	- Gas Metal Arc Welding (GMAW)
	- Short Circuiting Arc Welding
	- Spray Arc Welding
	- Flux Cored Arc Welding
Stick Position	- Output is always energized
Contactor on	- Shielded Metal Arc Welding (SMAW)
	- Air Carbon Arc Gouging (ACAG)
Mig Position	- Gas Metal Arc Welding (GMAW)
	- Short Circuiting Arc Welding
	- Spray Arc Welding
	- Flux Cored Arc Welding
TIG Position	- Gas Tungsten Arc Welding (GTAW) scratch start
Touch TIG Position	- Gas Tungsten Arc Welding (GTAW) with Lift Arc

N. POWER ON/OFF SWITCH - Controls the main input power into the welding machine. In the “ON” position the machine is energized and power is available to all of the control circuits. In the “OFF” position the machine is de-energized and no power is supplied to the control circuits.

3.3 MIG / GMAW (CV) OPERATION

A. Make all secondary output connections to the power source output receptacles as described in section 2 and as shown in the appropriate wire feeder and/or control instruction literature.

B. After the primary input connections have been made in accordance with section 2, close the main wall disconnect switch or circuit breaker.

C. Place the primary power switch in the ON position. This will apply power to the control circuitry as indicated by the MAIN POWER light on the front panel. If the MAIN POWER light does not lite, check the position of the INPUT VOLTAGE SELECT SWITCH for proper setting.

D. Place the PANEL/REMOTE switch in the desired position. Use the PANEL position for control from the power source's front panel (typical for conventional MIG wire feeders), or the REMOTE position for remote voltage control wire feeders and/or accessories. If REMOTE position is selected, set the PANEL potentiometer to maximum for full range from remote.

E. Place the PROCESS SELECTOR switch in the MIG position.

F. Set the APPLICATION SELECT SWITCH to the appropriate material/gas/application setting.

G. Set a wire feed speed and begin welding.

H. If operating in the PANEL mode, adjust the VOLTAGE potentiometer to the desired welding voltage by depressing the PRESET SWITCH and reading the value in the VOLTS DISPLAY. The PRESET SWITCH is only functional with the PANEL settings.

I. Set the ARC TRIM potentiometer to the center position. The microprocessor will provide the optimum arc characteristics for each APPLICATION setting. Additional adjustment may be made to suit specific needs or preferences and can be particularly effective in short circuiting arc applications.

NOTE

When the HC-5 remote hand control (P/N 34838) is plugged into the power source, the ARC TRIM potentiometer on the power source is disabled even when the power source's CONTROL switch is placed in the PANEL position.

J. Commence welding operations by energizing the torch switch.

K. For remaining wire feeder or control operations, refer to the appropriate instruction literature supplied with your particular system.

3.4 TIG / GTAW (CC) OPERATION

A. Make all secondary output connections to the power source output receptacles as described in section 2 and as shown in the appropriate accessory instruction literature.

B. After the primary input connections have been made in accordance with section 2, close the main wall disconnect switch or circuit breaker.

C. Place the primary power switch in the ON position. This will apply power to the control circuitry as indicated by the MAIN POWER light on the front panel.

ELECTRIC SHOCK CAN KILL! Make sure that the contactor control switch on the remote control accessory is in the "off" position until you are ready to weld. Otherwise, the electrode in the torch will be "electrically-hot" and could shock you.

D. Place the PROCESS SELECT switch in the TIG or TOUCH TIG position.

F. Place the PANEL/REMOTE switch in the appropriate position. Use the PANEL position for control from the power source's front panel, or the REMOTE position for control from a remote control accessory.

G. Adjust the PANEL CURRENT potentiometer to the desired welding current by depressing the PRESET SWITCH and reading the value in the AMPS DISPLAY.

Note

In the remote position, the max output for MIG, TIG and STICK is limited by the position of the "Panel" potentiometer; i.e., for maximum output, the PANEL potentiometer must be set to maximum.

NOTE

When the HC-5 remote hand control (P/N 34838) is plugged into the power source, the ARC FORCE potentiometer (used for stick welding) on the power source is disabled even when the power source's CONTROL switch is placed in the PANEL position.

J. Make sure you have a good clean ground and a secure workpiece. Also, ensure that shielding gas is turned on and flowing.

K. To establish the welding arc;
   1. TOUCH TIG - When selected, the voltmeter will indicate a voltage of 4 to 5 volts. As the tungsten is touched to the work piece the contactor will automatically be energized and a limited short circuit current of 25 amps will start to flow in the welding circuit. Rock the torch away from the workpiece and the welding arc will be established. The amperage will automatically increase to the pre-set value.
   2. TIG (scratch) Select PANEL or REMOTE mode switch on the front panel.
   3. Touch tungsten to work. Operate either the foot or the hand operated torch switch. Contactor will energize, and a limited short circuit current of 28 amps will flow. Back the torch away from the work piece and the welding current will increase to the value as controlled by the potentiometer.

L. For remaining accessory operations, refer to the appropriate instruction literature supplied with your particular system.

3.5 STICK / SMAW (CC) OPERATION

A. Make all secondary output connections to the power source output receptacles as described in section 2 and as shown in the appropriate accessory instruction literature.

B. After the primary input connections have been made in accordance with section 2, close the main wall disconnect switch or circuit breaker.

C. Place the primary power switch in the ON position. This will apply power to the control circuitry as indicated by the MAIN POWER light on the front panel.

ELECTRIC SHOCK CAN KILL! When the PROCESS SELECTOR SWITCH is set to the STICK position the welding output will be energized and the electrode in the holder will be "electrically-hot" and could shock you.

D. Place the PANEL/REMOTE switch in the desired position. Panel setting limits max current in either mode. Use the PANEL position for control from the power source's front panel, or the REMOTE position for control from a remote control accessory.

E. Place the PROCESS SELECT switch in the STICK position. The welding output will be energized and the electrode holder will be "electrically-hot".

G. Set the ARC FORCE CONTROL to the mid position.

I. Adjust the CURRENT for the stick electrode type and diameter, as specified by the electrode manufacturer, being used by depressing the PRESET SWITCH and reading the value in the AMPS DISPLAY. PRESET SWITCH can only be used in the PANEL position of the power source.

J. For remaining accessory operations, refer to the appropriate instruction literature supplied with your system.

3.6 OVERVIEW OF ERROR CODES AND PROGRAM UPDATES

ERR 1: High input voltage. Over 264 VAC in 230 mode, over 529 VAC in 460 mode, and over 661 VAC for 575.

ERR 2: Low input voltage. The low line is 161 VAC for 230, 322 VAC for 460 and 403 VAC for 575.

ERR 3: Over-voltage at the output. If the output voltage exceeds 80V, the machine will shut off the contactor. This was implemented to prevent a snubber failure from causing a dangerous voltage to appear at the output terminals.

ERR 4: Over temperature. One of the thermal switches has opened.

ERR 5: Over current in single-phase operation. In MIG welding, if an operator draws more than 250 amps for more than 5 seconds, this error will occur. In STICK or TIG modes, the machine will display this error if the control pot is turned up above 250 amps in single phase.

ERR 6: Extended secondary short circuit. The machine will allow a full short circuit condition (secondary current of more than 500 amps) to exist for 320 milliseconds before this error occurs.

ERR 7: Primary Over-current. This may indicate a failure of an output diode, the Hall Effect current sensor or a magnetic short to chassis.

Program Updates

The current program is “PRG 1.04”. The program has undergone 2 changes. The first was to reduce the low-line voltage referred to in “ERR 2”. The reason for this was that the MIG35 wire feeder was causing the machine to shut off due to its heavy draw on the control transformer. This heavy load caused the control voltages to sag, which resulted in the error message, even though acceptable line voltages were present on the primary. By adjusting for this sag in control voltage, the machine will now operate over its entire intended range.

The second modification was to the handling of short circuit time. The original short circuiting time allowed was 160 milliseconds. The short circuit time allowed was increased to 320 milliseconds and the handling of this timer in the program was improved.

Control Board Modifications

The MIG contactor circuits were modified to decrease holding time after trigger release to correct cases where the increased time was causing minor “burn-back” problems.

The output capability of the machine was modified to handle a 12 volt, 60 amp short arc aluminum MIG welding condition. Before the modification, this low power condition was not stable.

SECTION 3 OPERATION

4.1 GENERAL

If this equipment does not operate properly, stop work immediately and investigate the cause of the malfunction. Maintenance work must be performed by an experienced person, and electrical work by a trained electrician. Do not permit untrained persons to inspect, clean, or repair this equipment. Use only recommended replacement parts.

ELECTRIC SHOCK CAN KILL! Be sure that the line (wall) disconnect switch or circuit breaker is open before attempting any work inside the power source. Always wear safety goggles with side shields when blowing out the power source with air.

4.2 INSPECTION AND CLEANING

Since there are no moving parts (other than the fan) in the power source, maintenance consist mainly of keeping the interior of the cabinet clean. Periodically, remove the cover from the cabinet, and wearing proper eye protection, blow accumulated dust and dirt from the air passages and the interior components, using clean low pressure air. It is imperative that the air passages, to the interior of the unit, be free of dirt to ensure adequate circulation of cooling air, especially over the rectifier bridge plates. The length of time between cleaning will depend on the location of the unit, and the amount of dust in the atmosphere.

5.1 GENERAL

ELECTRIC SHOCK CAN KILL! Before attempting inspection or work inside the power source, be sure that all primary power to the machine has been externally disconnected and the line (wall) disconnect switch or circuit breaker is open.

5.2 FUNCTIONALITY CHECK (TABLE 5-1)

The 350mpi Functionality Check should be used to verify proper power source operation. Before performing the following checks, disconnect the remote connections (WIRE FEEDER and REMOTE CONTROL) from rear of power source and make sure there is no load attached to the output terminals.

Table 5-1. 350mpi Functionality Check

	YES	NO
1. Are input power supply connections properly secured?	Go to next step	Refer to Section 2.
2. If using 3-phase power, are all three primary leads securely connected to primary power switch. If using single-phase power, are black and white leads securely connected to primary power switch?	Go to next step.	
3. Position power source controls as follows: PROCESS SELECTOR - STICK CURRENT - MINIMUM ARC FORCE - MINIMUM	_	--
4. Turn primary power switch to ON position. Does MAIN POWER light illuminate?	Go to next step.	Power source faulty.
5. Do digital meters show about 68.0 volts and 00.0 amps?	Go to next step.	
7. Fan is not energized.	Go to next step.	
8. Place PANEL/REMOTE switch in the PANEL position. Do digital meters show 00.0 volts and 00.0 amps?	Go to next step.	
9. Place PROCESS SELECTOR to MIG position.		
10. Short electrode to work table , hold in place and return PROCESS SELECTOR to STICK. Does digital meter show approximately 50 amps?		Go tonext step.
11. Rotate ARC FORCE fully clockwise. Does digital meter show about 150 amps?	Go to next step.	
12. Rotate CURRENT fully clockwise. Does digital meter show about 500 amps?	Go to next step.	
ESAB 350mpi has passed the functionality check. Problem may be in interconnection of gas lines or polarity of output connectors. For technical assistance, refer to the Communication Guide located on the last page of this manual.		

SECTION 5 TROUBLESHOOTING

6.1 General

Replacement parts are illustrated on the following figures. When ordering replacement parts, order by part number and part name, as listed. Always provide the series or serial number of the unit on which the parts will be used. The serial number is stamped on the unit nameplate.

Replacement parts may be ordered from your ESAB distributor or from:

ESAB Welding & Cutting Products
Attn.: Customer Service Dept.
PO Box 100545, Ebenezer Road
Florence, SC, 29501-0545

Refer to the Communication Guide located on the last page of this manual for a list of customer service phone numbers.

NOTE:

Replacement Parts, Schematics and Wiring Diagrams on 279.4mm x 431.8mm (11” x 17”) paper are included inside the back cover of this manual.

NOTE:
Bill of material items that have blank part numbers are provided for customer information only. Hardware items should be available through local sources.

Revision History

Revision "A" added the Troubleshooting and Parts section.

Revision "B" updated the Volt-Ampere Characteristics and Duty Cycles charts, made corrections in Installation and Operation sections and updated the Troubleshooting section.

Revision "C" added the 575 V ac model.

Revision "D" added parts information for the 575V ac model.

Revision "E" updates the Wiring and Schematic Diagrams.

Revision "F" added parts and Input Connection information for the 400/440V ac model and updated Replacement Parts list.

Revision "G" added part designation and number for optional remote control HC-5, P/N 34838.

Revision "H" added Error Code and Program Updates in Operation subsection per Customer Service inputs.

Revision "J" changed BOM Item 63 from 952898 to 0558007860 per ECN #073242.

Revision "K" changed replacement parts and wiring diagram per ECN #083183. Moved schematics, wiring diagrams and replacement parts to back of manual.

ESAB Welding & Cutting Products, Florence, SC Welding Equipment
COMMUNICATION GUIDE - CUSTOMER SERVICES

A. CUSTOMER SERVICE QUESTIONS:
Order Entry | Product Availability | Pricing | Delivery
Order Changes | Saleable Goods Returns | Shipping Information

Eastern Distribution Center
Telephone: (800)362-7080 / Fax: (800) 634-7548

Central Distribution Center
Telephone: (800)783-5360 / Fax: (800) 783-5362

Western Distribution Center
Telephone: (800) 235-4012/ Fax: (888) 586-4670

B. ENGINEERING SERVICE: Telephone: (843) 664-4416 / Fax : (800) 446-5693
Welding Equipment Troubleshooting — Hours: 7:30 AM to 5:00 PM EST
Warranty Returns | Authorized Repair Stations

C. TECHNICAL SERVICE: Telephone: (800) ESAB-123/ Fax: (843) 664-4452
Part Numbers | Technical Applications — Hours: 8:00 AM to 5:00 PM EST
Performance Features | Technical Specifications | Equipment Recommendations

D. LITERATURE REQUESTS: Telephone: (843) 664-5562 / Fax: (843) 664-5548
Hours: 7:30 AM to 4:00 PM EST

E. WELDING EQUIPMENT REPAIRS: Telephone: (843) 664-4487 / Fax: (843) 664-5557
Repair Estimates | Repair Status — Hours: 7:30 AM to 3:30 PM EST

F. WELDING EQUIPMENT TRAINING:
Telephone: (843)664-4428 / Fax: (843) 679-5864
Training School Information and Registrations — Hours: 7:30 AM to 4:00 PM EST

G. WELDING PROCESS ASSISTANCE:
Telephone: (800) ESAB-123 — Hours: 7:30 AM to 4:00 PM EST

H. TECHNICAL ASST. CONSUMABLES:
Telephone : (800) 933-7070 — Hours: 7:30 AM to 5:00 PM EST

IF YOU DO NOT KNOW WHOM TO CALL

Telephone: (800) ESAB-123/ Fax: (843) 664-4452/ Web:http://www.esab.com

Hours: 7:30 AM to 5:00 PM EST

ESAB® ESAB Welding & Cutting Products
PO Box 100545, Florence SC 29501-0545

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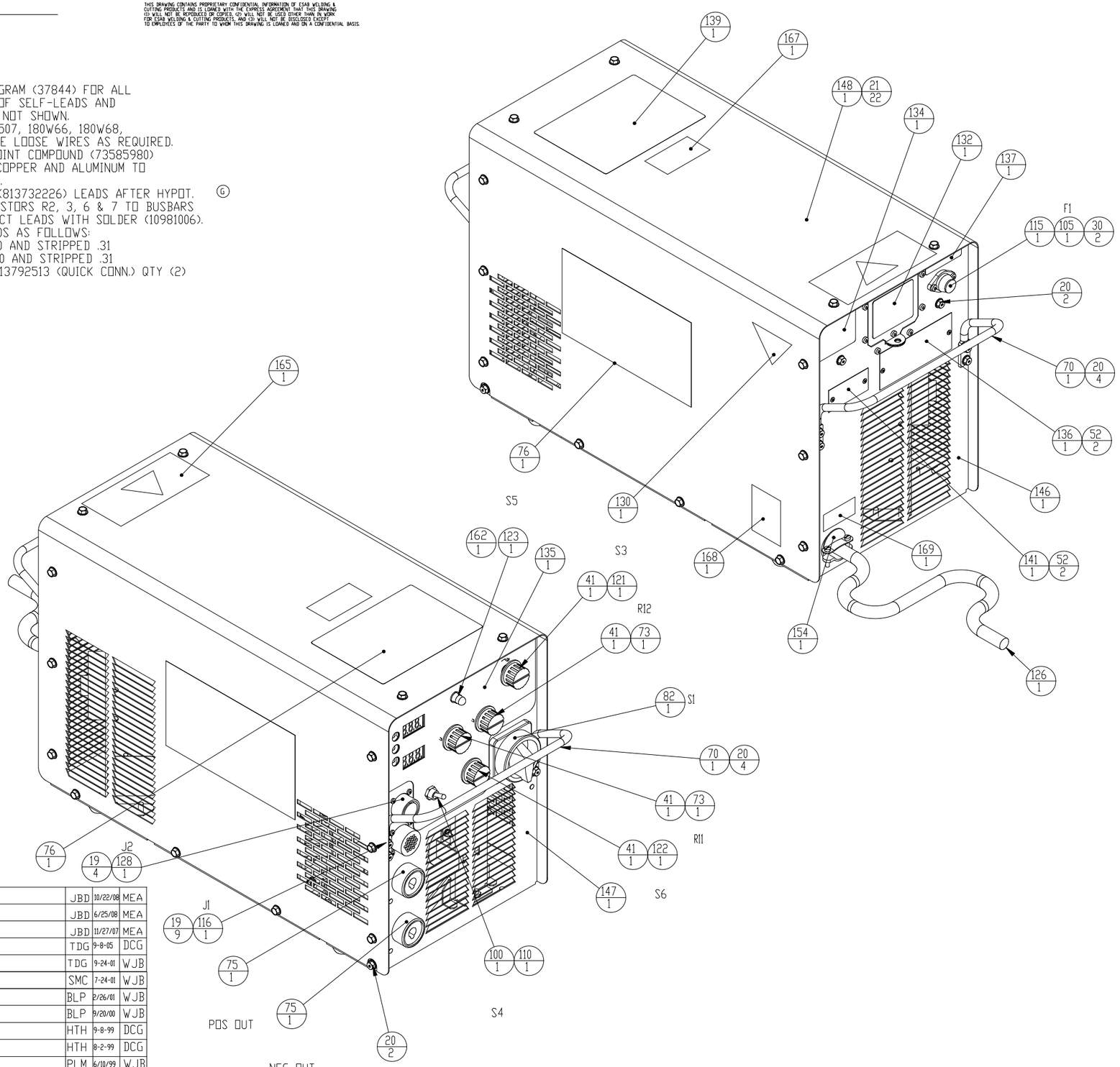
NOTES:

1. REFER TO WIRING DIAGRAM (37844) FOR ALL CONNECTION POINTS OF SELF-LEADS AND TRANSFORMER LEADS NOT SHOWN.
2. USE CABLE TIES (631507, 180W66, 180W68, 99511578) TO CONFINE LOOSE WIRES AS REQUIRED.
3. APPLY ELECTRICAL JOINT COMPOUND (73585980) TO ALL COPPER TO COPPER AND ALUMINUM TO COPPER CONNECTIONS.
4. CONNECT FAN MOTOR (8137322226) LEADS AFTER HYPOT. (G)
5. AFTER MOUNTING RESISTORS R2, 3, 6 & 7 TO BUSBARS WITH RIVETS, CONNECT LEADS WITH SOLDER (10981006).
6. TRIM FAN MOTOR LEADS AS FOLLOWS:
   M1-1 SHOULD BE 15.00 AND STRIPPED .31
   M1-2 SHOULD BE 17.00 AND STRIPPED .31
7. (E) PACK ITEM #160 P/N 13792513 (QUICK CONN.) QTY (2) WITH THE UNIT.



	M		CN-083183	JBD	10/22/08	MEA
	L		CN-083096	JBD	6/25/08	MEA
	K		CN-073242	JBD	11/27/07	MEA
	J		CN-053060	TDG	9-8-05	DCG
	H		CN-013272	TDG	9-24-01	WJB
	G		CN-013197	SMC	7-24-01	WJB
X	F		CN-013055	BLP	2/26/01	WJB
X	E		CN-003156	BLP	9/20/00	WJB
X	D		CN-993314	HTH	9-8-99	DCG
X	C		CN-993275	HTH	8-2-99	DCG
X	B		CN-993194	PLM	6/10/99	WJB
X	A		CN-993135	HTH	5-3-99	WJB
M	LTR	ZONE	CHANGE	BY	DATE	CH'KD

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION
	1	37504	AR	SCHEMATIC DIAGRAM
	2	37844	AR	WIRING DIAGRAM
	3	631507	AR	TYWRAP MEDIUM
	4	10981006	AR	SOLDER
	5	56996930	AR	STRIP SELF ADHESIVE RUBBER
	6	71200732	AR	ADH SI-RBR CLEAR
	7	73585976	AR	COMPOUND HEATSINK DOW 340
	8	73585980	AR	CMPD ELEC JOINT ALCOA 2 EJC
	9	84600814	AR	NOMEX 10 MIL X 11.25W
	10	90860018	AR	TUBING .042 ID BLK
	11	90861058	AR	TUBING 5/8 ID
	12	90861100	AR	SLVG PVC BLK 1.00 DIA.
	13	90863007	AR	TUBING HEAT SHRINK .250 ID BLK
	14	90863125	AR	TUBING HS .125 ID
	15	99510054	AR	TAPE .75W
	16	99511578	AR	SNAP IN TIE BASE .218
	17	180W66	AR	TYWRAP LARGE
	18	180W68	AR	TYWRAP SMALL
(E)(B)	19	61325851	36	SCREW PHTF #6-32 X .38
	20	61949087	38	SCREW HEX SER WSR HD 1/4-20 X .50
(C)	21	61328087	37	SCREW HWHTF 1/4-20 X .50
	22	63300916	19	NUT HEX #10-24
	23	64307887	16	WASHER LOCK EXT TOOTH #8
(E)	24	05N35080	17	NUT M5
(M)(E)	25	64304860	3	WASHER FLAT #6
(E)	26	05W01055	16	WASHER FLAT M5
	27	61325849	13	SCREW PHTF #6-32 X .25
(E)	28	61325826	16	SCREW PHTF #4-40 X .38
(E)	29	05W10051	14	WASHER LOCK M5
	30	61325878	11	SCREW PHTF #8-32 X .38
(C)	31	64307004	12	WASHER LOCK EXT TOOTH #10
(K)	32	05S12016	6	SCREW METRIC M05-0.80 X 16
	33	64304050	8	WASHER FLAT #10
	34	61325900	7	SCREW PHTF #10-24 X .38
(B)	35	64302860	6	WASHER LOCK #6
	36	64307996	4	WASHER LOCK EXT TOOTH 1/4
(C)	37	99512251	6	POP RIVET .125D .126-.187
(E)	38	61325910	7	SCREW PHTF #10--32 X .38
	39	34916	4	BUSBAR TAB
	40	8951161	4	CAPC METPOLY 20uf 400 VDC
(F)	41	0558001818	4	KNOB 1.37 DIA
(E)	42	17240240	4	RES WW 4K OHM 25W
	43	17750020	4	RES 20 OHM 50W 3% NON-INDUCT
	44	61325880	4	SCREW PHTF #8-32 X .50
	45	61325902	4	SCREW PHTF #10-24 X .50
	46	61341087	4	SCREW HEX CAP 1/4-20 X .50
	47	63310886	4	NUT HEX LOCK #8-32
	48	64302920	4	WASHER LOCK #10
	49	64302996	4	WASHER LOCK 1/4
	50	64304075	4	WASHER FLAT 1/4
	51	64304110	4	WASHER FLAT 5/16
	52	99510492	4	POP RIVET .125D
	53	182W12	4	FOOT
	54	951052	3	HOUSING CONTACT CRIMP 10 PIN
	55	61341361	3	SCREW HEX CAP 5/16-18 X .75
	56	63300100	2	NUT HEX 1/4-20
	57	63310121	3	NUT HEX LOCK 5/16-18
	58	37593	2	BUSBAR RESISTOR
	59	37595	2	HEATSINK RES
	60	676876	2	INSULATOR NOMEX
	61	8950101	2	HOUSING CONTACT CRIMP 4 PIN
	62	950446	2	HOUSING CONTACT CRIMP 7 PIN
	63	951085	2	SWITCH THERMAL 15A 120V
	64	8951191	2	PAD THERMAL IGBT 1200V
	65	951567	2	STDF NYL 1.25 LG #6-32
(C)	66	8951635	2	CAP ALUM 1900uf 450VDC
	67	8951940	2	CAPC 1uf 600 VDC
	68	952072	2	CONNECTOR 20 AWG 12 PIN
	69	8952873	2	MODULE DUAL IGBT 200A 600V
	70	8952888	2	HANDLE
(K)	71	80558007860	2	DIODE OUTPUT
(B)	73	13730632	2	POT LIN 10K 2W .88L
	74	13732431	2	MTA-156 COVER 12 PINS
(L)	75	813733935	2	PANEL RECEPT 2-1/0
	76	13734588	2	LOGO ESAB CLEAR
	77	17725005	2	RES 5 OHM 25W
	78	61341089	2	SCREW HEX CAP 1/4-20 X .75
(B)	79	63300862	1	NUT HEX #6-32
	80	99512068	2	BRKT MTG #9 RESISTOR
(F)	81	37875	2	BRACKET INDUCTOR
	82	836107	1	SWITCH POWER 600V 63 AMP
	83	37584	1	BAFFLE FRONT
	84	37585	1	BAFFLE MIDDLE
	85	37590	1	BUS CAP A+

PROJ/ENGINEER DWG.

ENGLISH DWG

UNLESS OTHERWISE SPECIFIED,DIM ARE IN INCHES:
TOL .XX ± .015
.XXX ± .005
ANGLES ± 1°
CHAMFERS & C'SINKS ±2°
SURFACE ROUGHNESS IS IN MICROINCHES 125√
REMOVE ALL BURRS BREAK SHARP EDGES

SCALE .375

FIRST MADE FOR *

DRAWN	CHECKED	APPROVED
BY HTH	BY DCG	BY WH
DATE 3-4-99	DATE 3-4-99	DATE 3-4-99

PA-6100-97-09 — RELEASED FOR — 3-25-97 DATE

ESAB WELDING & CUTTING PRODUCTS
FLORENCE, SC. 29501

TITLE
350 MPI 230/460V 50/60Hz

REPRO MADE FROM *
SIMILAR TO *
SUP.
SUP. BY

D -36975

SHEET 1 OF 3

D - 36975

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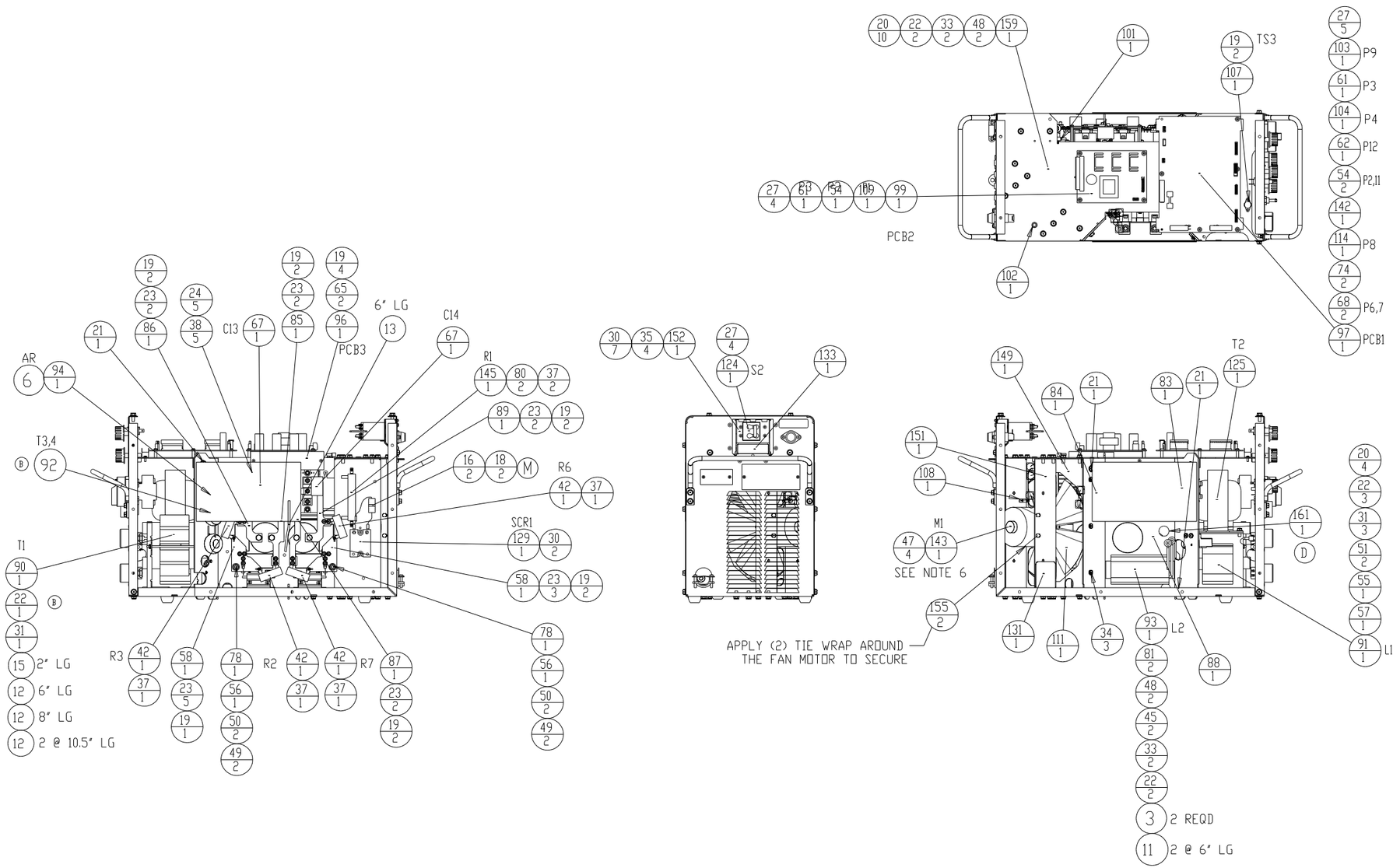

	M		SEE SHEET 1			
M	LTR	ZONE	CHANGE	BY	DATE	CH'KD

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION
	86	37591	1	BUS CAP A-
	87	37592	1	BUS CAP B-
	88	37594	1	BRACKET CAP KYDEX
	89	37596	1	BUS CAP B+
	90	37598	1	XFMR MAIN
	91	837599	1	INDUCTOR
	92	37600	1	REF WIRE KIT REAR
	93	837602	1	INDUCTOR DC
	94	37852	1	REF WIRE KIT PRI
	95	37859	1	WIRE KIT FRONT
	96	838012	1	PC BRD IGBT DRIVER
	97	838150	1	PCB CONTROL
	98	838152	1	PCB METER
	99	838154	1	PCB LINE MONITOR
	100	8634515	1	SW TGGL SPDT 2 POS 15A 125V
	101	634736	1	CAP SPLICE
	102	634818	1	BUSHING SNAP .25 ID .38 MH .41L
	103	950096	1	HOUSING CONTACT CRIMP 3 PIN
	104	950098	1	HOUSING CONTACT CRIMP 16 PIN
	105	8950228	1	FUSE 4A 500V TIME DELAY
	106	950444	1	HOUSING CONTACT CRIMP 6 PIN
	107	8950710	1	SWITCH THERMAL 15A 120V 131
	108	950904	1	TERM 1L/M .250 TS X 18-22 AWG
	109	8951340	1	PLUG 14 POS
	110	8951474	1	SWITCH SEAL BLACK
	111	951939	1	FAN BLADE
	112	8951997	1	TRANSDUCER CURRENT
	113	952008	1	HOUSING CRIMP 4 PIN
	114	952081	1	CONNECTOR 20 AWG 10 PIN
	115	8952136	1	FUSE HOLDER PANEL MOUNT
	116	952209	1	PANEL RECEPTACLE 19 PIN F
	117	8952235	1	MODULE INPUT BRIDGE/SCR
	118	8952280	1	PAD THERMAL INPUT BRIDGE
	119	952889	1	HEATSINK PRIMARY
	120	952890	1	HEATSINK SECONDARY
	121	8952892	1	SW ROTARY 2 POLE 5 POS
	122	8952894	1	SW ROTARY 1 POLE 8 POS
	123	8952895	1	SWITCH PB NORMALLY OPEN
	124	8952896	1	DUAL BREAKER W/2 AUX SW
	125	952897	1	XFMR CTR
	126	8952899	1	POWER CABLE INPUT
	127	8952900	1	DIODE 1/2 BRIDGE
H	128	8952937	1	RECPT PNL MNT 14 PIN 22-14S
	129	8952938	1	SCR 480V 12A PNL MNT
	130	954506	1	LABEL ISO 9002
	131	954699	1	LABEL WARNING FAN HAZARD
	132	954802	1	LABEL ELECTRIC SHOCK
	133	954803	1	LABEL DO NOT SWITCH W/POWER ON
	134	954805	1	LABEL DISCONNECT POWER
	135	954808	1	OVERLAY
	136	954816	1	NAMEPLATE 350 MPI
	137	954820	1	LABEL 4A 600VAC SLOW BLOW FUSE
	138	2017483	1	FUSE 1A 250V N-T DELAY
	139	2091514	1	LABEL WARNING ARC WELD & CUT
	140	2091558	1	LABEL GROUND BLACK .50 X 1.38

SHEET 2 OF 3

PRO/ENGINEER DWG.	ENGLISH DWG		
	UNLESS OTHERWISE SPECIFIED,DIM ARE IN INCHES TOL XX ± .015 XXX ± .005 ANGLES ± 1° CHAMFERS & C'SINKS ±2° SURFACE ROUGHNESS IS IN MICROINCHES 125 REMOVE ALL BURRS BREAK SHARP EDGES	PA-6100-97-09	3-25-97
		RELEASED FOR	DATE
		ESAB WELDING & CUTTING PRODUCTS FLORENCE, SC. 29501	
		TITLE 350 MPI 230/460V 50/60Hz	
		REPRO MADE FROM ✖	
	SCALE .2	SIMILAR TO ✖	
	FIRST MADE FOR ✖	SUP.	
	DRAWN BY HTH DATE 3-4-99 / CHECKED BY DCG DATE 3-4-99 / APPROVED BY WH DATE 3-4-99	SUP. BY	D -36975

NOV 1994

D - 36975

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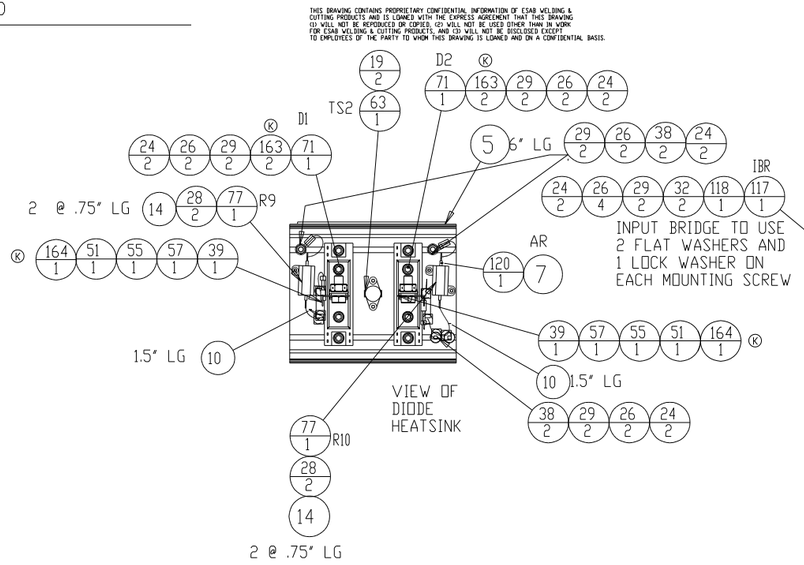

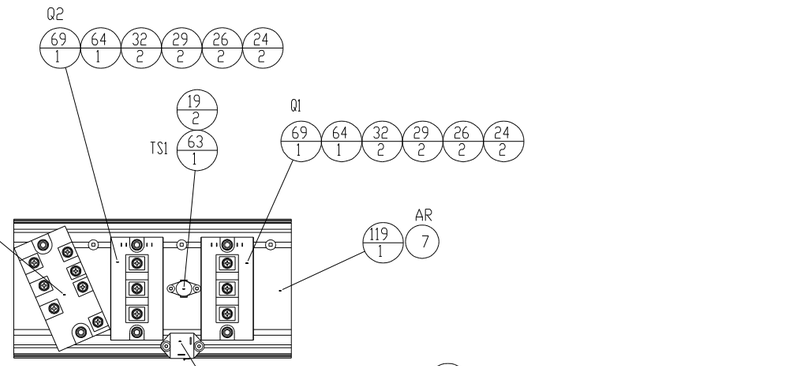

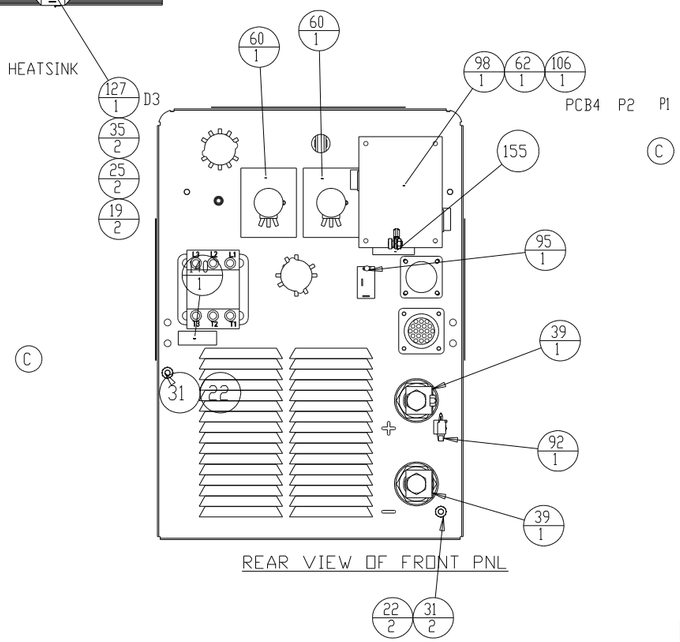

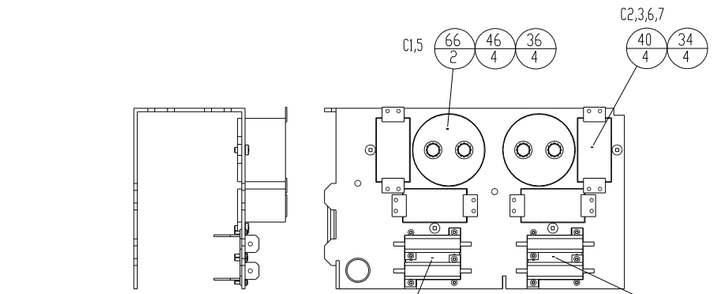

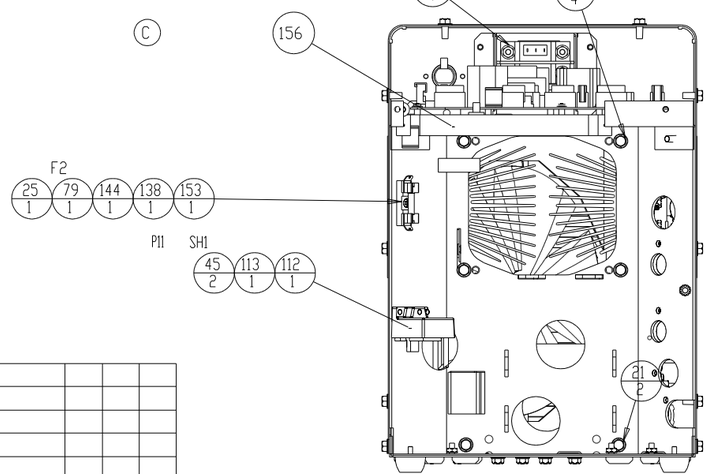

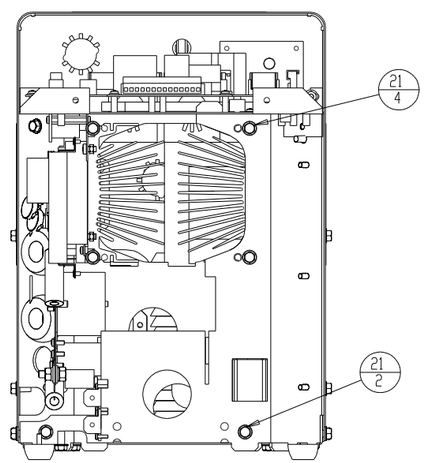

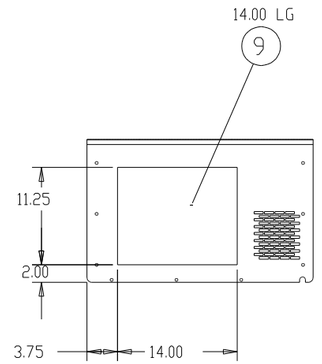

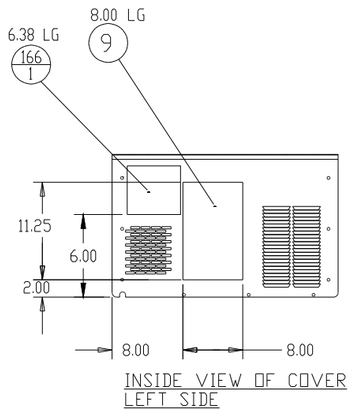

NOV 1994

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION
	141	13730763	1	NAMEPLATE CODE SERIAL STOCK
	142	13731781	1	MTA-156 COVER 10 PIN
G	143	813732226	1	FAN MOTOR 1/16 HP
	144	61325852	1	SCREW PHTF #6-32 X .50
	145	99512178	1	RES WW FIXD LT 50W 5% 50 OHM
	146	37581GY	1	BASE
	147	37582GY	1	PNL FRONT
	148	37583YL	1	COVER
F	149	37586	1	BAFFLE REAR
F	151	37588	1	BRACKET FAN
F	152	37840GY	1	BOX CIRCUIT BREAKER
	153	896W10	1	FUSE BLOCK 1 POLE QUICK CONNECT
	154	97W63	1	STRAIN RELIEF 1.38 MTG HOLE
	155	950995	AR	CABLE TIE 14.6 LG BLK
D	156	22994375	AR	WEATHER STRIPPING .375 THK X .50 W
C	157	22994500	AR	WEATHER STRIPPING .50 THK X .75 W
	158	79900317	AR	INSULATOR SEALING 3.75 X .125
	159	37587	1	SHELF PCB
D	160	13792513	1	CABLE CONNECTION
D	161	2133535	1	PLUG HOLE .875 DH .125CT NYL BLK
J	162	0558005486	1	SWITCH SEAL PUSH BUTTON BLK
K	163	05S12012	4	SCREW METRIC M05-0.08 x 12
K	164	0558007862	2	BUSS BAR
M	165	8954994	1	LABEL, HIGH VOLTAGE SYM.
M	166	84600211	AR	NOMEX 10 MIL 6.38W
M	167	955269	1	LABEL, READ MANUAL
M	168	0558954034	1	LABEL, CUSTOMER ASSIST
M	169	954425	1	LABEL, CSA LR 30071 NRTL

M	LTR	ZONE	CHANGE	BY	DATE	CH'KD
	M		SEE SHEET 1			

SHEET 3 OF 3

PRO/ENGINEER DWG.

ENGLISH DWG

UNLESS OTHERWISE SPECIFIED, DIM ARE IN INCHES.
TOL .XX ± .015
.XXX ± .005
ANGLES ± 1°
CHAMFERS & C'SINKS ±2°
SURFACE ROUGHNESS IS IN MICROINCHES 125 √
REMOVE ALL BURRS BREAK SHARP EDGES
SCALE .375
FIRST MADE FOR ✱

PA-6100-97-09 — RELEASED FOR — 3-25-97 DATE

ESAB WELDING & CUTTING PRODUCTS
FLORENCE, SC. 29501

TITLE
350 MPI 230/460V 50/60Hz

REPRO MADE FROM ✱
SIMILAR TO ✱

DRAWN	CHECKED	APPROVED	SUP.
BY HTH	BY DCG	BY WH	SUP. BY
DATE 3-4-99	DATE 3-4-99	DATE 3-4-99	D -36975

NOV 1994

D-36976

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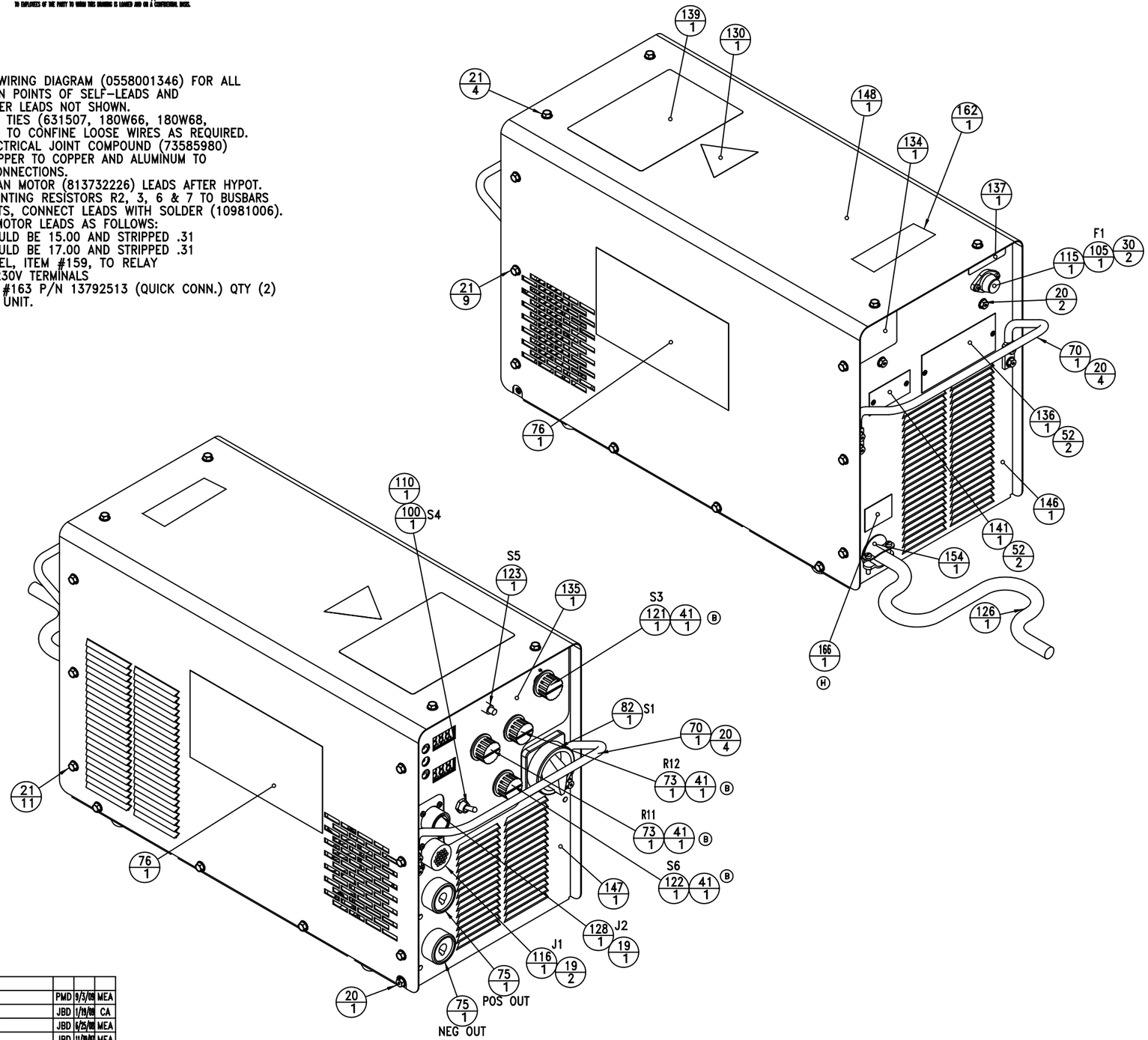
NOTES:
1. REFER TO WIRING DIAGRAM (0558001346) FOR ALL CONNECTION POINTS OF SELF-LEADS AND TRANSFORMER LEADS NOT SHOWN.
2. USE CABLE TIES (631507, 180W66, 180W68, 99511578) TO CONFINE LOOSE WIRES AS REQUIRED.
3. APPLY ELECTRICAL JOINT COMPOUND (73585980) TO ALL COPPER TO COPPER AND ALUMINUM TO COPPER CONNECTIONS.
4. CONNECT FAN MOTOR (813732226) LEADS AFTER HYPOT.
5. AFTER MOUNTING RESISTORS R2, 3, 6 & 7 TO BUSBARS WITH RIVETS, CONNECT LEADS WITH SOLDER (10981006).
6. TRIM FAN MOTOR LEADS AS FOLLOWS:
   M1-1 SHOULD BE 15.00 AND STRIPPED .31
   M1-2 SHOULD BE 17.00 AND STRIPPED .31
7. APPLY LABEL, ITEM #159, TO RELAY ACCROSS 230V TERMINALS
(A) 8. PACK ITEM #163 P/N 13792513 (QUICK CONN.) QTY (2) WITH THE UNIT.



BILL OF MATERIALS

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SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION
	1	0558001345	AR	SCHEMATIC DIAG 350 MPI 575V
	2	0558001346	AR	WIRING DIAG 350 MPI 575V
	3	631507	AR	TYWRAP MEDIUM
	4	10981006	AR	SOLDER
	5	56996930	AR	STRIP SELF ADHESIVE RUBBER
	6	71200732	AR	ADH SI-RBR CLEAR
	7	73585976	AR	COMPOUND HEATSINK DOW 340
	8	73585980	AR	CMPD ELEC JOINT ALCOA 2 EJC
	9	84600814	AR	NOMEX 10 MIL X 11.25W
	10	90860018	AR	TUBING .042 ID BLK
	11	90861058	AR	TUBING 5/8 ID
	12	90861100	AR	SLVG PVC BLK 1.00 DIA.
	13	90863007	AR	TUBING HEAT SHRINK .250 ID BLK
	14	90863125	AR	TUBING HS .125 ID
	15	99510054	AR	TAPE .75W
	16	99511578	AR	SNAP IN TIE BASE .218
	17	180W66	AR	TYWRAP LARGE
	18	180W68	AR	TYWRAP SMALL
(A)	19	61325851	20	SCREW PHTF #6-32 X .38
	20	61949087	36	SCREW HEX SER WSR HD 1/4-20 X .50
	21	61328087	39	SCREW HWHTF 1/4-20 X .50
	22	63300916	9	NUT HEX #10-24
	23	64307887	16	WASHER LOCK EXT TOOTH #8
(A)	24	05N35080	17	NUT M5
(A)	25	64304860	6	WASHER FLAT #6
(A)	26	05W01055	16	WASHER FLAT M5
	27	61325849	5	SCREW PHTF #6-32 X .25
(A)	28	61325826	16	SCREW PHTF #4-40 X .38
(A)	29	05W10051	14	WASHER LOCK M5
	30	61325878	18	SCREW PHTF #8-32 X .38
	31	64307004	8	WASHER LOCK EXT TOOTH #10
(J)(F)	32	05S12016	2	SCREW METRIC M05-0.80 X 16
	33	64304050	2	WASHER FLAT #10
	34	61325900	7	SCREW PHTF #10-24 X .38
	35	63310916	4	NUT HEX LOCK #10-24
	36	64307996	4	WASHER LOCK EXT TOOTH 1/4
	37	99512251	6	POP RIVET .125D .126-.187
(A)	38	61325910	7	SCREW PHTF #10--32 X .38
	39	34916	4	BUSBAR TAB
C2,3,6,7	40	8951161	4	CAPC METPOLY 20uf 400 VDC
(B)	41	0558001818	4	KNOB 1.37 DIA
R2,3,6,7	42	17240310	4	RES WW 10K OHM 25W
R4,8,13,14	43	17750020	4	RES 20 OHM 50W 3% NON-INDUCT
	44	61325880	4	SCREW PHTF #8-32 X .50
	45	61325902	2	SCREW PHTF #10-24 X .50
	46	61341087	4	SCREW HEX CAP 1/4-20 X .50
	47	63310886	4	NUT HEX LOCK #8-32
	48	64302920	2	WASHER LOCK #10
	49	64302996	4	WASHER LOCK 1/4
	50	64304075	4	WASHER FLAT 1/4
	51	64304110	4	WASHER FLAT 5/16
	52	99510492	4	POP RIVET .125D
	53	182W12	4	FOOT
PCB1-P2,P11	54	951052	2	HOUSING CONTACT CRIMP 10 PIN
	55	61341361	3	SCREW HEX CAP 5/16-18 X .75
	56	63300100	2	NUT HEX 1/4-20
	57	63310121	3	NUT HEX LOCK 5/16-18
	58	37593	2	BUSBAR RESISTOR
	59	37595	2	HEATSINK RES
	60	676876	2	INSULATOR NOMEX
	61	8950101	1	HOUSING CONTACT CRIMP 4 PIN
PCB1-P10 PCB1-P7	62	950446	2	HOUSING CONTACT CRIMP 7 PIN
TS1,2	63	951085	2	SWITCH THERMAL 15A 120V
	64	8951191	2	PAD THERMAL IGBT 1200V
	65	951567	2	STDF NYL 1.25 LG #6-32
C1,C5	66	8951961	2	CAP ALUM 1900uf 500VDC
C13,C14	67	8951940	2	CAPC 1uf 600 VDC
PCB1-P6,P7	68	952072	2	CONNECTOR 20 AWG 12 PIN
Q1,Q2	69	8951800	2	MODULE DUAL IGBT 150A 1200V
	70	8952888	2	HANDLE
(F) D1,D2	71	80558007860	2	DIODE OUTPUT
T1	72	0558001354	1	XFMR MAIN 575V
R11,R12	73	13730632	2	POT LIN 10K 2W .88L
	74	13732431	2	MTA-156 COVER 12 PINS
(G) OUT(-)(+)	75	81373935	2	PANEL RECEPT 2-170
	76	13734588	2	LOGO ESAB CLEAR
R9,R10	77	17725005	2	RES 5 OHM 25W
	78	61341089	2	SCREW HEX CAP 1/4-20 X .75
	79	63300862	1	NUT HEX #6-32
	80	99512068	2	BRKT MTG #9 RESISTOR
S1	82	36107	1	SWITCH POWER 600V 63 AMP
	83	0558001372	1	BAFFLE FRONT
	84	0558001373	1	BAFFLE MIDDLE
	85	37590	1	BUS CAP A+

M	LTR	CHANGE	BY	DATE	CHK'D
	J	CN-093171	PMD	9/3/99	MEA
	H	CN-083230	JBD	1/19/99	CA
	G	CN-083096	JBD	6/25/98	MEA
	F	CN-073242	JBD	11/20/97	MEA
	E	CN-023186	SMC	5-29-97	WJB
	D	CN-003272	TDG	8/24/97	WJB
	C	CN-003197	TDG	7/25/97	WJB
	A	CN-003156	BLP	9/21/96	WJB
	B	CN-013055	SMC	2/22/96	WJB

ENGLISH DWG. UNLESS OTHERWISE SPECIFIED, DIM ARE IN INCHES. TOL. .XX ± .015 .XXX ± .005 ANGLES ± 1° CHAMFERS & C'SINKS 82° SURFACE ROUGHNESS IS IN MICRONINCHES. ✓ REMOVE ALL BURRS BREAK SHARP EDGES	pc-6100-97-09 RELEASED FOR	6/25/97 DATE	
	ESAB WELDING & CUTTING PRODUCTS FLORENCE, SC 29501		
	TITLE 350 MPI 575V 50/60HZ		
	REPRO MADE FROM		
SCALE .375	SIMILAR TO		
FIRST MADE FOR	SUP.		
DRAWN BY RAM DATE 10/5/99	CHECKED BY WJB DATE 11/5/99	APPROVED BY11/5/99 DATE WEH	SUP. BY D-36976

OCT 1995

SHEET 1 OF 3

D-36976

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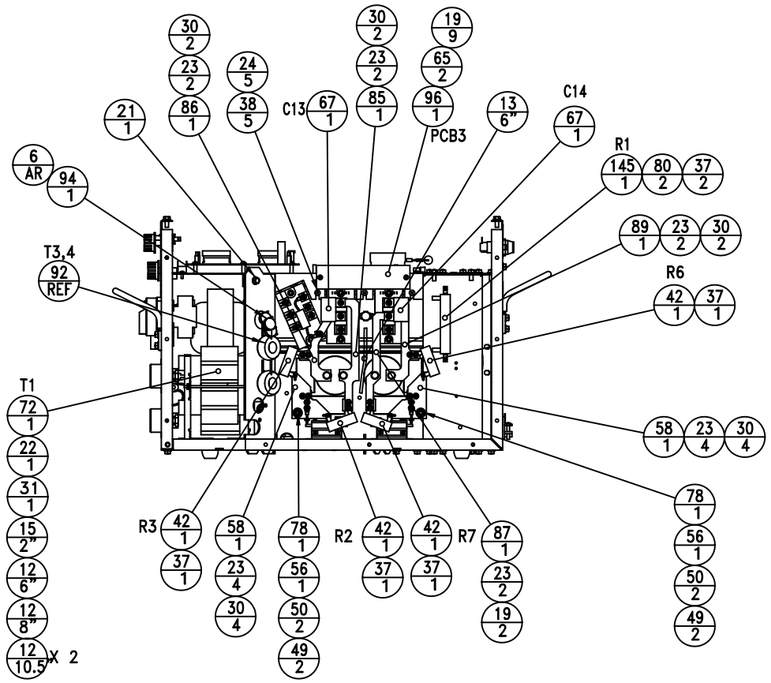

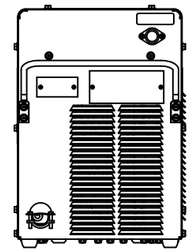

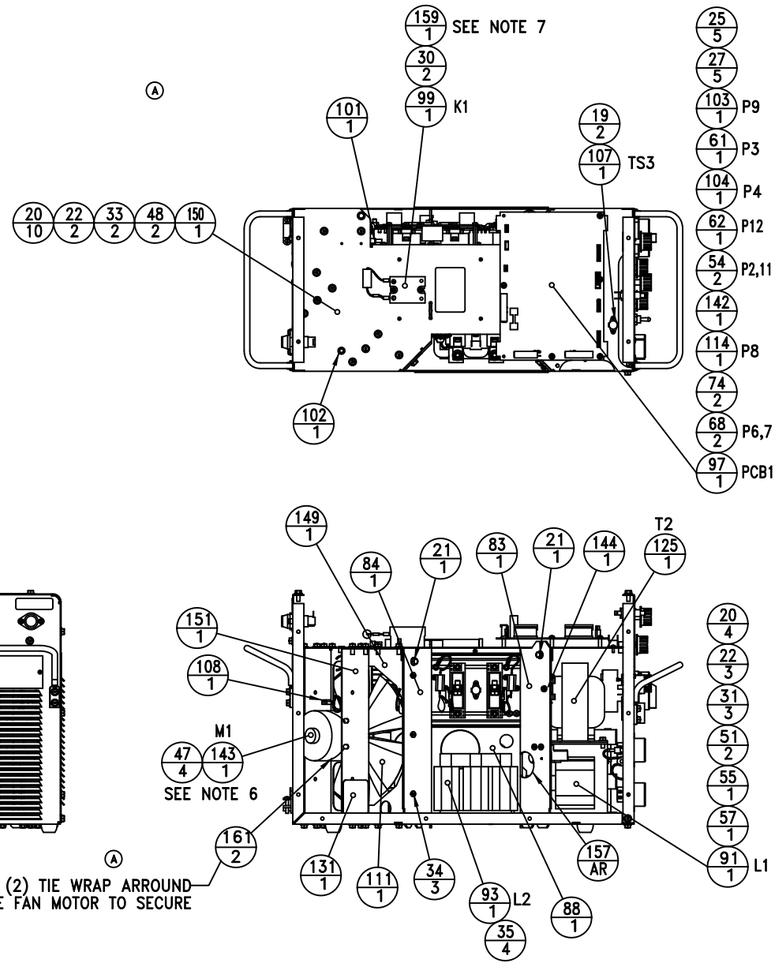

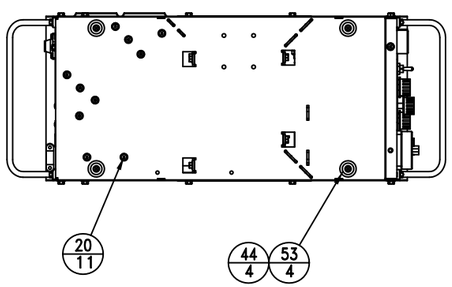

BILL OF MATERIALS

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	89	37596	1	BUS CAP B+
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	92	0558001348	1	REF WIRE KIT REAR 575V
L2	93	0558001380	1	LINE REACTOR, 575V
	94	0558001352	1	REF WIRE KIT PRI 575V
	95	37859	1	WIRE KIT FRONT
PCB3	96	838012	1	PC BRD IGBT DRIVER
PCB1	97	838150	1	PCB CONTROL
PCB4	98	838152	1	PCB METER
K1	99	8952938	1	RELAY SS 3-32VDC/24-280VAC 25A
S4	100	8634515	1	SW TGGL SPDT 2 POS 15A 125V
	101	634736	1	CAP SPLICE
	102	634818	1	BUSHING SNAP .25 ID .38 MH .41L
PCB1-P9	103	950096	1	HOUSING CONTACT CRIMP 3 PIN
PCB1-P4	104	950098	1	HOUSING CONTACT CRIMP 16 PIN
F1	105	80558001379	1	FUSE 2A 600V TIME DELAY
PCB4-P1	106	950444	1	HOUSING CONTACT CRIMP 6 PIN
TS3	107	8950710	1	SWITCH THERMAL 15A 120V 131
	108	950904	1	TERM TL/M .250 TS X 18-22 AWG
	110	8951474	1	SWITCH SEAL BLACK
	111	951939	1	FAN BLADE
SH1	112	8951997	1	TRANSDUCER CURRENT
P11	113	952008	1	HOUSING CRIMP 4 PIN
PCB1-P8	114	952081	1	CONNECTOR 20 AWG 10 PIN
	115	8952136	1	FUSE HOLDER PANEL MOUNT
J1	116	952209	1	PANEL RECEPTACLE 19 PIN F
IBR	117	8952235	1	MODULE INPUT BRIDGE/SCR
	118	8952280	1	PAD THERMAL INPUT BRIDGE
	119	952889	1	HEATSINK PRIMARY
	120	952890	1	HEATSINK SECONDARY
S3	121	8952892	1	SW ROTARY 2 POLE 5 POS
S6	122	8952894	1	SW ROTARY 1 POLE 8 POS
S5	123	8952895	1	SWITCH PB NORMALLY OPEN
T2	125	952897	1	XFMR CTR
	126	80558001350	1	POWER CABLE INPUT
J2	128	8952937	1	RECPT PNL MNT 14 PIN 22-14S
	130	954506	1	LABEL ISO 9002
	131	954699	1	LABEL WARNING FAN HAZARD
	134	954805	1	LABEL DISCONNECT POWER
	135	955234	1	OVERLAY FRONT PANEL 350MPI (BL)
	136	954866	1	NAMEPLATE 350 MPI 575V
	137	954867	1	LABEL 2A 600VAC SLOW BLOW FUSE
F2	138	2017483	1	FUSE 1A 250V N-T DELAY
	139	2091514	1	LABEL WARNING ARC WELD & CUT
	140	954992	1	LABEL GROUND (BL)
	141	13730763	1	NAMEPLATE CODE SERIAL STOCK
	142	13731781	1	MTA-156 COVER 10 PIN
M1	143	813732226	1	FAN MOTOR 1/16 HP
	144	61325852	1	SCREW PHTF #6-32 X .50
R1	145	99512178	1	RES WW FIXD LT 50W 5% 50 OHM
	146	0558001351GY	1	BASE
	147	37582GY	1	PNL FRONT

M	LTR	CHANGE	BY	DATE	CHK'D
	J	SEE SHEET ONE			

SHEET 2 OF 3

ENGLISH DWG. UNLESS OTHERWISE SPECIFIED, DIM ARE IN INCHES. TOL. .XX ± .015, .XXX ± .005, ANGLES ± 1° CHAMFERS & C'SINKS ±2° SURFACE ROUGHNESS IS IN MICROINCHES. REMOVE ALL BURRS BREAK SHARP EDGES	pa-6100-97-09 RELEASED FOR	6/25/97 DATE
	ESAB WELDING & CUTTING PRODUCTS FLORENCE, SC 29501	
	TITLE 350 MPI 575V 50/60HZ	
SCALE .375	REPRO MADE FROM / SIMILAR TO	
FIRST MADE FOR	SUP.	
DRAWN BY RAM DATE 10/3/99 / CHECKED BY WJB DATE 11/3/99 / APPROVED BY11/5/99 DATE WEH	SUP. BY D-36976	

OCT 1995

D-36976

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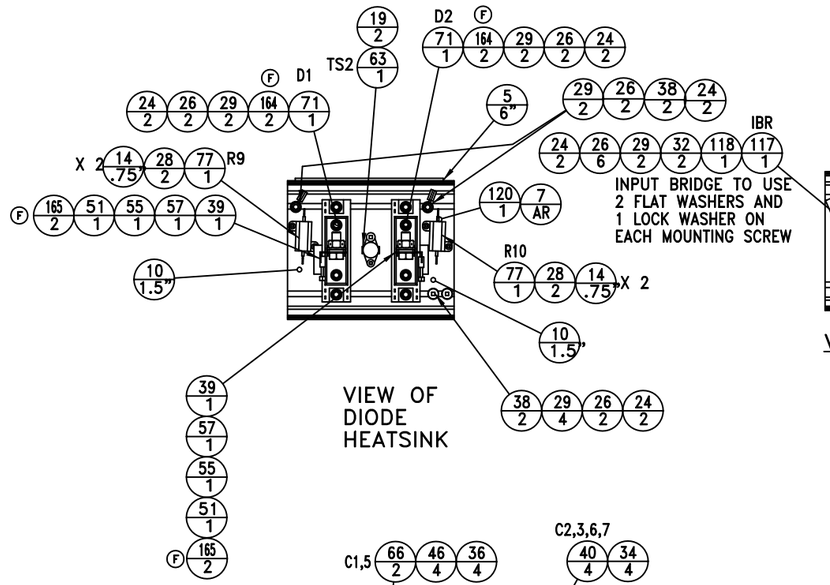
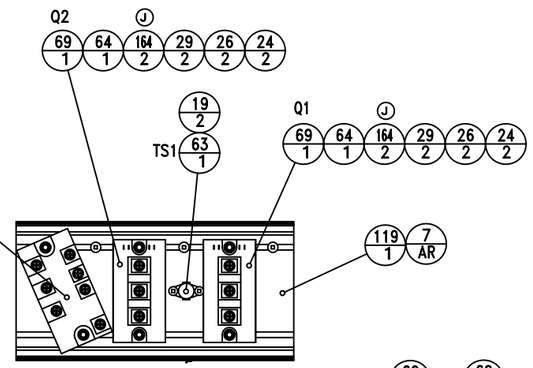
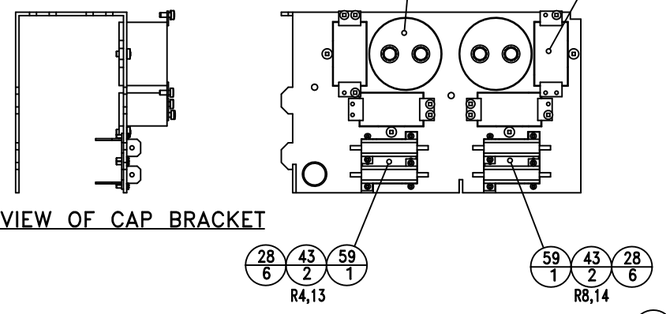


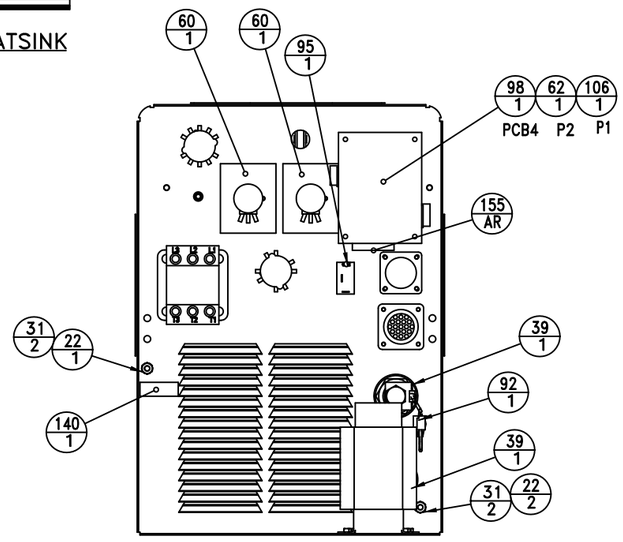
VIEW OF DIODE HEATSINK



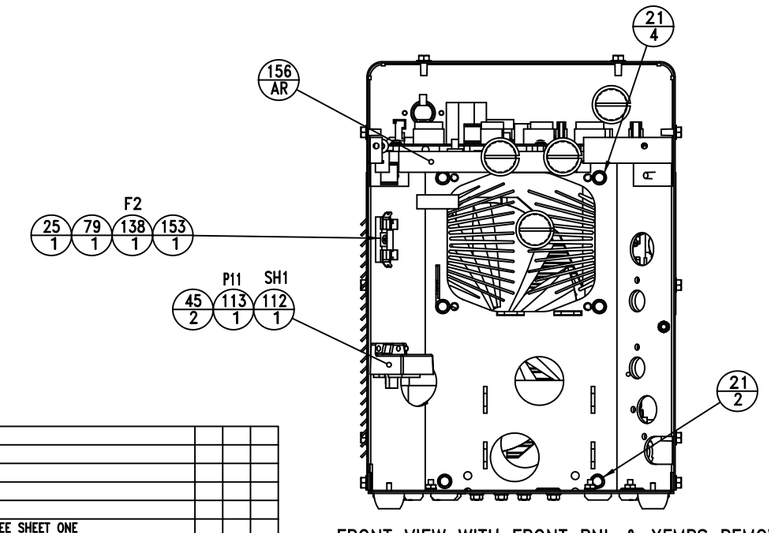
VIEW OF IGBT HEATSINK



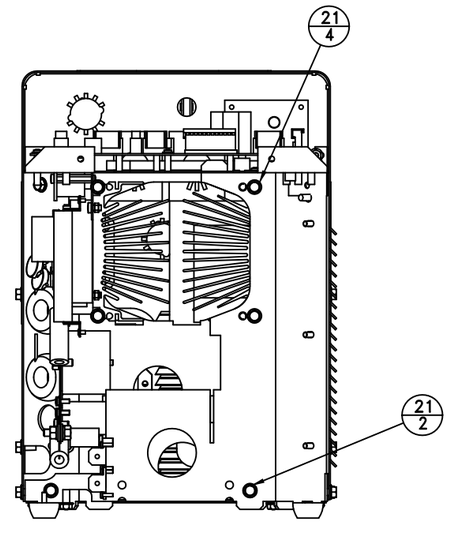
END VIEW OF CAP BRACKET



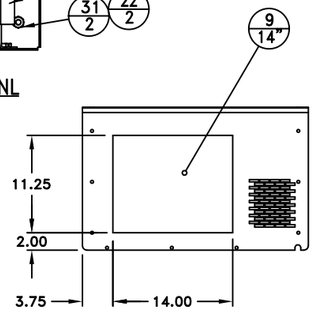
REAR VIEW OF FRONT PNL



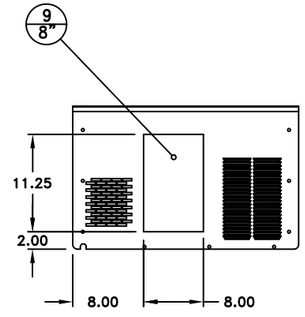
FRONT VIEW WITH FRONT PNL & XFMRS REMOVED



REAR VIEW WITH REAR PNL & FAN REMOVED



INSIDE VIEW OF COVER
RIGHT SIDE



INSIDE VIEW OF COVER
LEFT SIDE

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION
	148	37583YL	1	COVER
(B)	149	37586	1	BAFFLE REAR
(B)	150	37587	1	SHELF PCB
(B)	151	37588	1	BRACKET FAN
	153	896W10	1	FUSE BLOCK 1 POLE QUICK CONNECT
	154	97W63	1	STRAIN RELIEF 1.38 MTG HOLE
	155	22994500	AR	WEATHER STRIPPING .50 THK X .75 W
	156	22994375	AR	WEATHER STRIPPING .375 THK X .50 W
	157	79900317	AR	INSULATOR SEALING 3.75 X .125
(E)(A)	159	954991	1	LABEL WARN HIGH VOLT RED (BL)
(A)	160	564773	2	TERM RING #10 SS X 22-16 AWG
(A)	161	950995	AR	CABLE TIE 14.6 LG BLK
(E)(A)	162	8954994	1	LABEL DANGER HIGH VOLT (BL)
(A)	163	13792513	2	QUICK CONNECTION
(J)(F)	164	055120112	8	SCREW METRIC M05-0.08x12
(F)	165	055800782	2	BUSS BAR
(H)	166	954425	1	LABEL CSA NTRL

M	LTR	CHANGE	BY	DATE	CHK'D
	J	SEE SHEET ONE			

SHEET 3 OF 3

ENGLISH DWG. UNLESS OTHERWISE SPECIFIED, DIM ARE IN INCHES. TOL. .XX ± .015, .XXX ± .005, ANGLES ± 1°, CHAMFERS & C'SINKS 45° SURFACE ROUGHNESS IS IN MICROINCHES. ✓ REMOVE ALL BURRS BREAK SHARP EDGES	pg-6100-97-09 RELEASED FOR	6/25/97 DATE
	ESAB WELDING & CUTTING PRODUCTS FLORENCE, SC 29501	
	TITLE 350 MPI, 575V, 50/60HZ	
	REPRO MADE FROM	
SCALE .375	SIMILAR TO	
FIRST MADE FOR	SUP.	
DRAWN BY RAM DATE 10/5/99 / CHECKED BY WJB DATE 11/5/99 / APPROVED BY 11/5/99 DATE WEH	SUP. BY	D-36976

OCT 1995

D -36977

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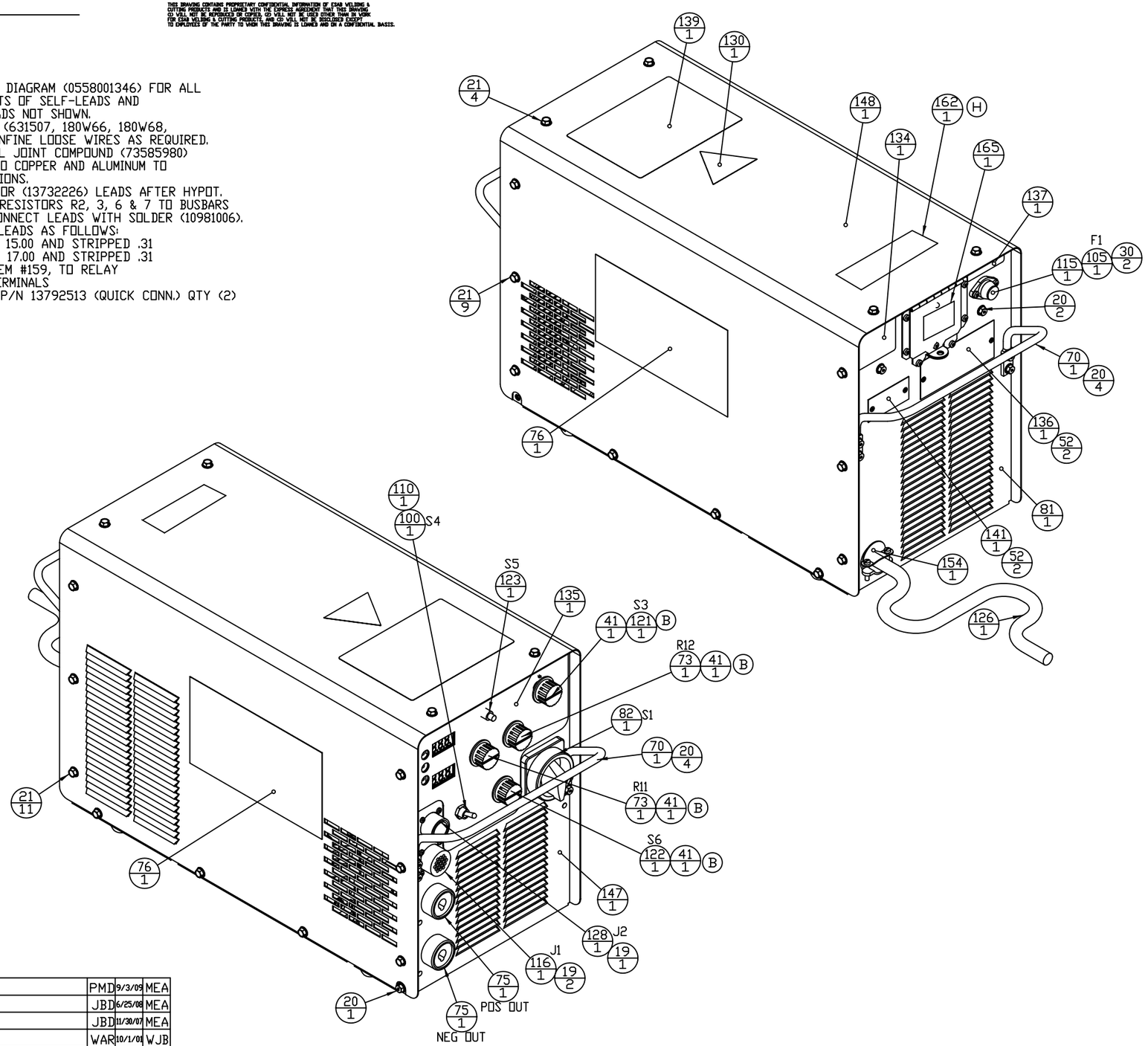
NOTES:
1. REFER TO WIRING DIAGRAM (0558001346) FOR ALL CONNECTION POINTS OF SELF-LEADS AND TRANSFORMER LEADS NOT SHOWN.
2. USE CABLE TIES (631507, 180W66, 180W68, 99511578) TO CONFINE LOOSE WIRES AS REQUIRED.
3. APPLY ELECTRICAL JOINT COMPOUND (73585980) TO ALL COPPER TO COPPER AND ALUMINUM TO COPPER CONNECTIONS.
4. CONNECT FAN MOTOR (13732226) LEADS AFTER HYPOT.
5. AFTER MOUNTING RESISTORS R2, 3, 6 & 7 TO BUSBARS WITH RIVETS, CONNECT LEADS WITH SOLDER (10981006).
6. TRIM FAN MOTOR LEADS AS FOLLOWS:
   M1-1 SHOULD BE 15.00 AND STRIPPED .31
   M1-2 SHOULD BE 17.00 AND STRIPPED .31
7. APPLY LABEL, ITEM #159, TO RELAY ACCROSS 230V TERMINALS
8. PACK ITEM #163 P/N 13792513 (QUICK CONN.) QTY (2) WITH THE UNIT.



M	LTR	ZONE	CHANGE	BY	DATE	CH'KD
	H		CN-093171	PMD	9/3/09	MEA
	G		CN-083096	JBD	6/25/08	MEA
	F		CN-073242	JBD	11/30/07	MEA
	E		CN-013307	WAR	10/1/01	WJB
	D		CN-013272	TDG	8/22/01	WJB
	C		CN-013197	SMC	7/24/01	WJB
	B		CN-013055	SMC	2/26/01	WJB
	A		CN-013039	BLP	2/1/01	DCG

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

	SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION
		1	0558001345	AR	SCHEMATIC DIAG 350 MPI 400V/575V
		2	0558001346	AR	WIRING DIAG 350 MPI 400V/575V
		3	631507	AR	TYWRAP MEDIUM
		4	10981006	AR	SOLDER
		5	56996930	AR	STRIP SELF ADHESIVE RUBBER
		6	71200732	AR	ADH SI-RBR CLEAR
		7	73585976	AR	COMPOUND HEATSINK DOW 340
		8	73585980	AR	CMPD ELEC JOINT ALCOA 2 EJC
		9	84600814	AR	INOMEX 10 MIL X 11.25W
		10	90860018	AR	TUBING .042 ID BLK
		11	90861058	AR	TUBING 5/8 ID
		12	90861100	AR	SLVG PVC BLK 1.00 DIA.
		13	90863007	AR	TUBING HEAT SHRINK .250 ID BLK
		14	90863125	AR	TUBING HS .125 ID
		15	99510054	AR	TAPE .75W
		16	99511578	AR	SNAP IN TIE BASE .218
		17	180W66	AR	TYWRAP LARGE
		18	180W68	AR	TYWRAP SMALL
		19	61325851	20	SCREW PHTF #6-32 X .38
		20	61949087	36	SCREW HEX SER WSR HD 1/4-20 X .50
		21	61328087	39	SCREW HWHTF 1/4-20 X .50
		22	63300916	9	NUT HEX #10-24
		23	64307887	16	WASHER LOCK EXT TOOTH #8
		24	05N35080	17	NUT M5
		25	64304860	6	WASHER FLAT #6
		26	05W01055	16	WASHER FLAT M5
		27	61325849	5	SCREW PHTF #6-32 X .25
		28	61325826	16	SCREW PHTF #4-40 X .38
		29	05W10051	14	WASHER LOCK M5
		30	61325878	25	SCREW PHTF #8-32 X .38
		31	64307004	8	WASHER LOCK EXT TOOTH #10
F		32	05S12016	6	SCREW METRIC M05-0.80 X 16
		33	64304050	2	WASHER FLAT #10
		34	61325900	7	SCREW PHTF #10-24 X .38
		35	63310916	4	NUT HEX LOCK #10-24
		36	64307996	4	WASHER LOCK EXT TOOTH 1/4
		37	99512251	6	POP RIVET .125D .126-.187
		38	61325910	7	SCREW PHTF #10--32 X .38
		39	34916	4	BUSBAR TAB
	C2,3,6,7	40	8951161	4	CAPC METPOLY 20uf 400 VDC
B		41	0558001818	4	KNOB 1.37 DIA
	R2,3,6,7	42	17240310	4	RES WW 10K OHM 25W
	R4,8,13,14	43	17750020	4	RES 20 OHM 50W 3% NON-INDUCT
		44	61325880	4	SCREW PHTF #8-32 X .50
		45	61325902	2	SCREW PHTF #10-24 X .50
		46	61341087	4	SCREW HEX CAP 1/4-20 X .50
		47	63310886	4	NUT HEX LOCK #8-32
		48	64302920	2	WASHER LOCK #10
		49	64302996	4	WASHER LOCK 1/4
		50	64304075	4	WASHER FLAT 1/4
		51	64304110	4	WASHER FLAT 5/16
		52	99510492	4	POP RIVET .125D
		53	182W12	4	FOOT
	PCB1-P2,P11	54	951052	2	HOUSING CONTACT CRIMP 10 PIN
		55	61341361	3	SCREW HEX CAP 5/16-18 X .75
		56	63300100	2	NUT HEX 1/4-20
		57	63310121	3	NUT HEX LOCK 5/16-18
		58	37593	2	BUSBAR RESISTOR
		59	37595	2	HEATSINK RES
		60	676876	2	INSULATOR NOMEX
		61	8950101	1	HOUSING CONTACT CRIMP 4 PIN
	PCB1-P12 PCB1-P2	62	950446	2	HOUSING CONTACT CRIMP 7 PIN
	TS1,2	63	951085	2	SWITCH THERMAL 15A 120V
		64	8951191	2	PAD THERMAL IGBT 1200V
		65	951567	2	STDF NYL 1.25 LG #6-32
H	C1,C5	66	8951635	2	CAP ALUM 1900uf 450VDC
	C13,C14	67	8951940	2	CAPC 1uf 600 VDC
H	PCB1-P6,P7	68	952072	2	CONNECTOR 20 AWG 12 PIN
H	Q1,Q2	69	8952873	2	MODULE DUAL IGBT 200A 600V
		70	8952888	2	HANDLE
	D1,D2	71	80558007860	2	DIODE OUTPUT
F	T1	72	0558002536	1	XFMR MAIN 400V
	R11,R12	73	13730632	2	POT LIN 10K 2W .88L
		74	13732431	2	MTA-156 COVER 12 PINS
G	OUT(-)(+)	75	813733935	2	PANEL RECEPT 2-1/0
		76	13734588	2	LOGO ESAB CLEAR
	R9,R10	77	17725005	2	RES 5 OHM 25W
		78	61341089	2	SCREW HEX CAP 1/4-20 X .75
		79	63300862	1	NUT HEX #6-32
		80	99512068	2	BRKT MTG #9 RESISTOR
		81	3758IGY	1	BASE
	S1	82	836107	1	SWITCH POWER 600V 63 AMP
		83	0558001372	1	BAFFLE FRONT
		84	0558001373	1	BAFFLE MIDDLE

SHEET 1 OF 3

PRO/ENGINEER DWG

ENGLISH DWG

UNLESS OTHERWISE SPECIFIED,DIM ARE IN INCHES.
TOL .XX ± .015
.XXX ± .005
ANGLES ± 1°
CHAMFERS & C'SINKS ±5°
SURFACE ROUGHNESS IS IN MICROINCHES 125
REMOVE ALL BURRS BREAK SHARP EDGES

PA-6100-97-09 — 6/25/97 RELEASED FOR DATE

ESAB WELDING & CUTTING PRODUCTS
FLORENCE, SC. 29501

TITLE
350 MPI 400V 50/60Hz

REPRO MADE FROM ※
SCALE.375 — SIMILAR TO D-36976
FIRST MADE FOR 350MPI 400V — SUP.
SUP. BY

DRAWN	CHECKED	APPROVED
BY BLP	BY DCG	BY GWD
DATE 1/15/01	DATE 1/16/01	DATE 1/16/01

D -36977

NOV 1994

D - 36977

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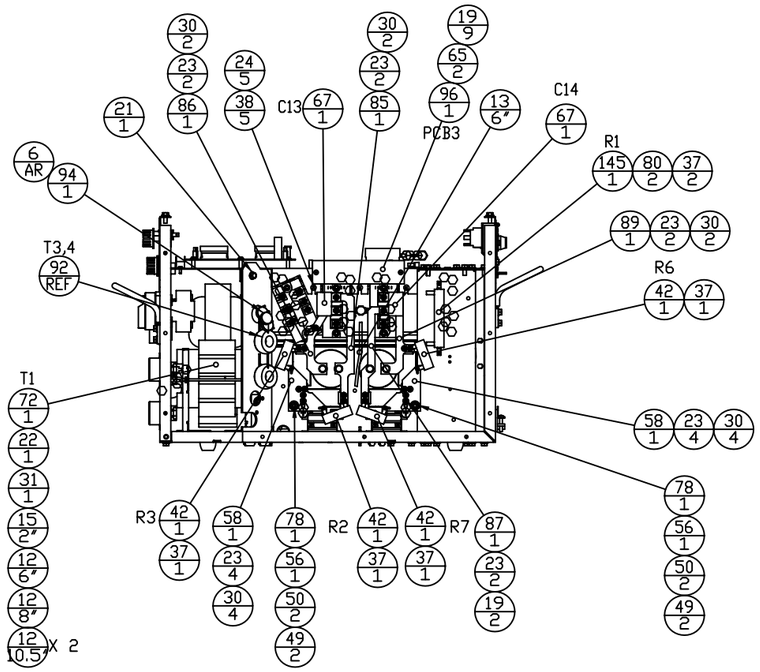

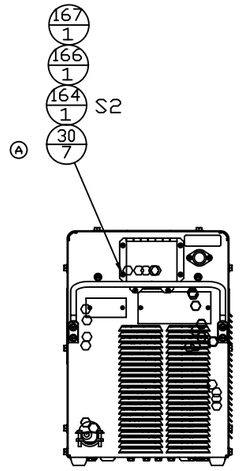

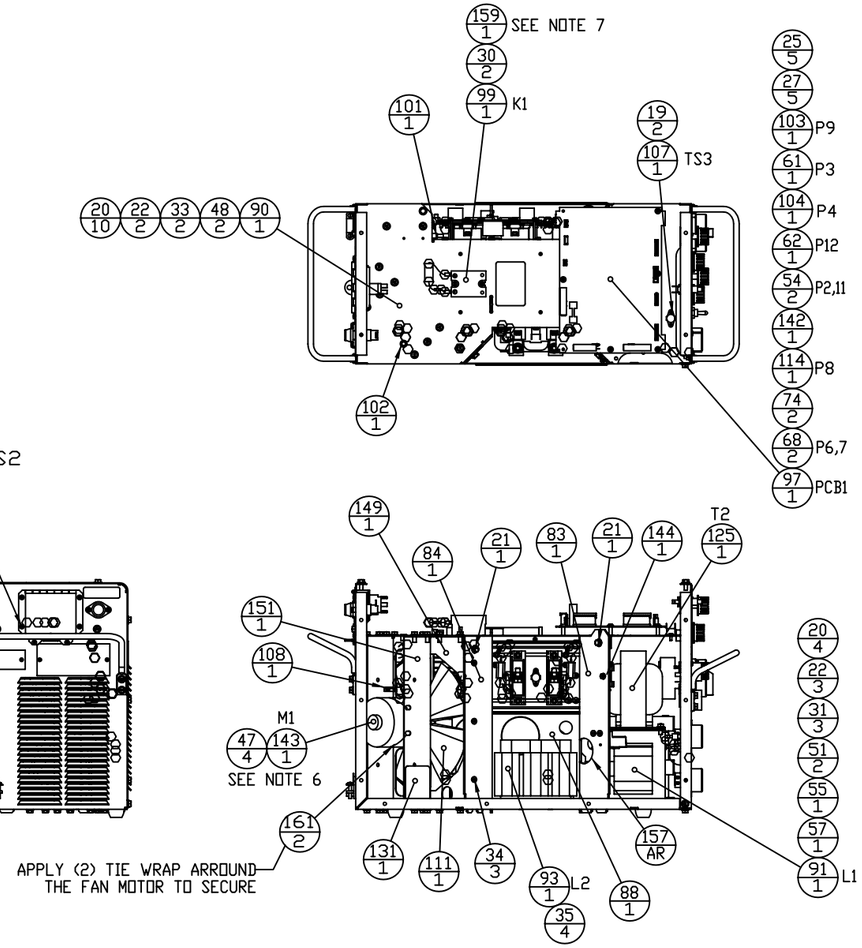

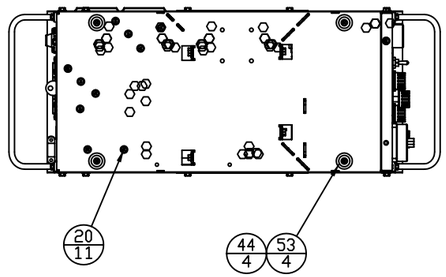

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION
	85	37590	1	BUS CAP A+
	86	37591	1	BUS CAP A-
	87	37592	1	BUS CAP B-
	88	37594	1	BRACKET CAP KYDEX
	89	37596	1	BUS CAP B+
(B)	90	37587	1	SHELF PCB
L1	91	837599	1	INDUCTOR
	92	0558001348	1	REF WIRE KIT REAR 575V
(E) L2	93	80558001380	1	LINE REACTOR 400V
	94	0558002541	1	REF WIRE KIT PRIMARY 400V
	95	37859	1	WIRE KIT FRONT
PCB3	96	838012	1	PC BRD IGBT DRIVER
PCB1	97	838150	1	PCB CONTROL
PCB4	98	838152	1	PCB METER
(A) K1	99	8951818	1	RELAY SS 3-32VDC/24-280VAC 25A
S4	100	8634515	1	SW TGGL SPDT 2 POS 15A 125V
	101	634736	1	CAP SPLICE
	102	634818	1	BUSHING SNAP .25 ID .38 MH .41L
PCB1-P9	103	950096	1	HOUSING CONTACT CRIMP 3 PIN
PCB1-P4	104	950098	1	HOUSING CONTACT CRIMP 16 PIN
F1	105	80558001379	1	FUSE 2A 600V TIME DELAY
PCB4-P1	106	950444	1	HOUSING CONTACT CRIMP 6 PIN
TS3	107	8950710	1	SWITCH THERMAL 15A 120V 131
	108	950904	1	TERM IL/M 250 TS X 18-22 AWG
	110	8951474	1	SWITCH SEAL BLACK
	111	951939	1	FAN BLADE
SH1	112	8951997	1	TRANSDUCER CURRENT
P11	113	952008	1	HOUSING CRIMP 4 PIN
PCB1-P8	114	952081	1	CONNECTOR 20 AWG 10 PIN
	115	8952136	1	FUSE HOLDER PANEL MOUNT
J1	116	952209	1	PANEL RECEPTACLE 19 PIN F
IBR	117	8952235	1	MODULE INPUT BRIDGE/SCR
	118	8952280	1	PAD THERMAL INPUT BRIDGE
	119	952889	1	HEATSINK PRIMARY
	120	952890	1	HEATSINK SECONDARY
S3	121	8952892	1	SW ROTARY 2 POLE 5 POS
S6	122	8952894	1	SW ROTARY 1 POLE 8 POS
S5	123	8952895	1	SWITCH PB NORMALLY OPEN
T2	125	0558002539	1	XFMR CTR 400V
	126	80558001350	1	POWER CABLE INPUT 10GA
(D) J2	128	8952937	1	RECPT PNL MNT 14 PIN 22-14S
	130	954506	1	LABEL ISO 9002
	131	954699	1	LABEL WARNING FAN HAZARD
	134	954805	1	LABEL DISCONNECT POWER
	135	954808	1	OVERLAY
	136	954935	1	NAMEPLATE 350 MPI 400V
	137	954867	1	LABEL 2A 600VAC SLOW BLOW FUSE
F2	138	2017483	1	FUSE 1A 250V N-T DELAY
	139	2091514	1	LABEL WARNING ARC WELD & CUT
	140	2091558	1	LABEL GROUND BLACK .50 X 1.38
	141	13730763	1	NAMEPLATE CODE SERIAL STOCK
M1	142	13731781	1	MTA-156 COVER 10 PIN
(C)	143	813732226	1	FAN MOTOR 1/16 HP
	144	61325852	1	SCREW PHTF #6-32 X .50
(A) R1	145	99512178	1	RES WW FIXD LT 50W 5% 50 OHM

M	LTR	ZONE	CHANGE	BY	DATE	CH'KD
	H		SEE SHEET 1			

SHEET 2 OF 3

PRO/ENGINEER DWG.	ENGLISH DWG	
UNLESS OTHERWISE SPECIFIED,DIM ARE IN INCHES.	PA-6100-97-09	6/25/97
TOL .XX ± .015 .XXX ± .005 ANGLES ± 1° CHAMFERS & C'SINKS ±2° SURFACE ROUGHNESS IS IN MICROINCHES 125 REMOVE ALL BURRS BREAK SHARP EDGES	RELEASED FOR	DATE
	ESAB WELDING & CUTTING PRODUCTS FLORENCE, SC. 29501	
	TITLE 350 MPI 400V 50/60Hz	
SCALE:2	REPRO MADE FROM # SIMILAR TO D-36976	
FIRST MADE FOR 350MPI 400V	SUP.	
DRAWN BY BLP DATE 1/15/01	CHECKED BY DCG DATE 1/16/01	APPROVED BY GWD DATE 1/16/01
SUP. BY	D 36977	

NOV 1994

D -36977

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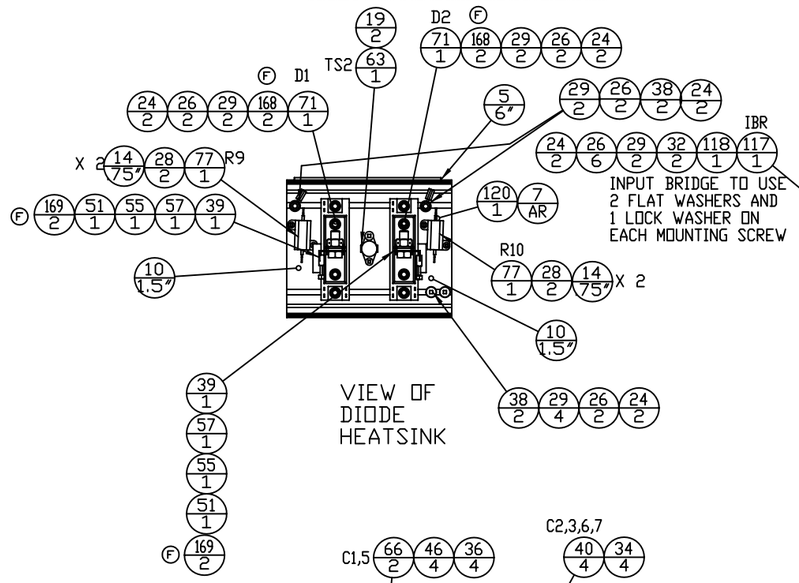
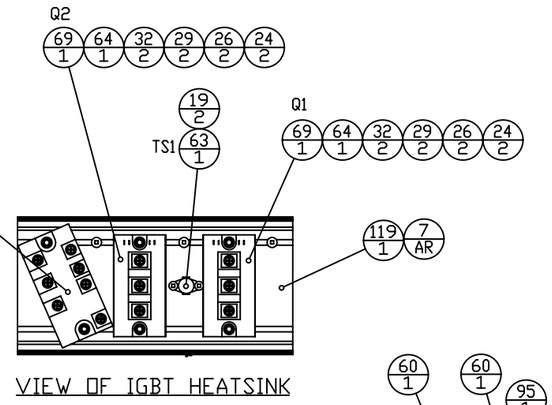
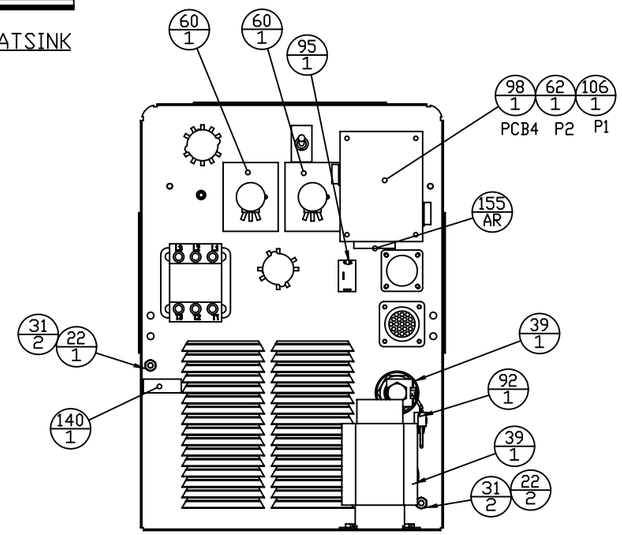


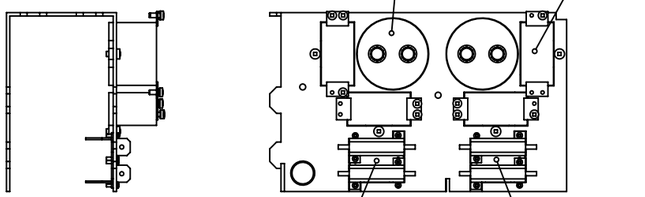
VIEW OF DIODE HEATSINK



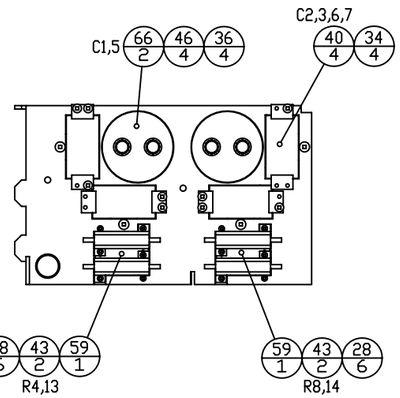
VIEW OF IGBT HEATSINK

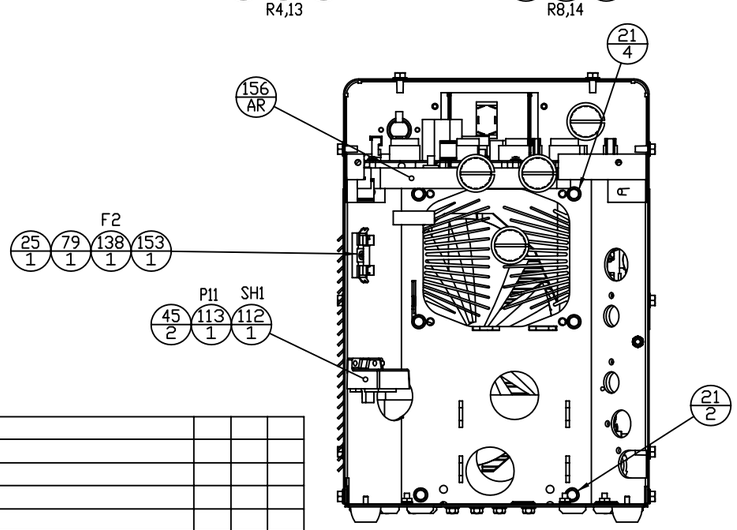


REAR VIEW OF FRONT PNL

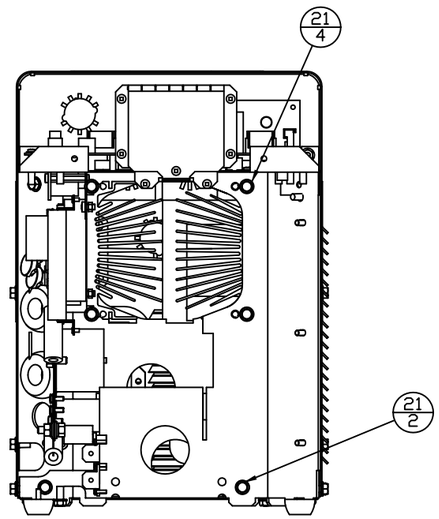


END VIEW OF CAP BRACKET

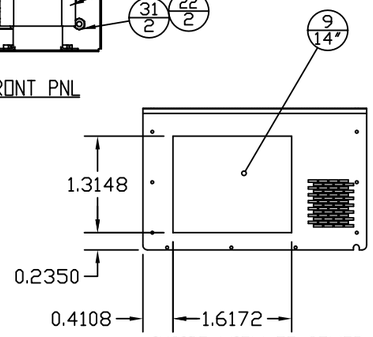




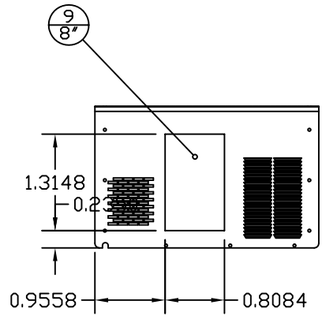
FRONT VIEW WITH FRONT PNL & XFMRS REMOVED



REAR VIEW WITH REAR PNL & FAN REMOVED



INSIDE VIEW OF COVER
RIGHT SIDE



INSIDE VIEW OF COVER
LEFT SIDE

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION
	147	37582GY	1	PNL FRONT
B	148	37583YL	1	COVER
B	149	37586	1	BAFFLE REAR
	151	37588	1	BRACKET FAN
	153	896W10	1	FUSE BLOCK 1 POLE QUICK CONNECT
	154	97W63	1	STRAIN RELIEF 1.38 MTG HOLE
	155	22994500	AR	WEATHER STRIPPING .50 THK X .75 W
	156	22994375	AR	WEATHER STRIPPING .375 THK X .50 W
	157	79900317	AR	INSULATOR SEALING 3.75 X .125
	159	23604891	1	LABLE, DANGER HIGH VOLTAGE
	160	564773	2	TERM RING #10 SS X 22-16 AWG
	161	950995	AR	CABLE TIE 14.6 LG BLK
H	162	8954994	1	LABEL DANGER HIGH VOLTAGE (BL)
	163	13792513	2	QUICK CONNECTION
A	S2	164 8952220	1	SWITCH TOGGLE 3PDT
A		165 954802	1	LABEL ELECTRIC SHOCK
A		166 954938	1	LABEL DO NOT SW P/W ON 440V
A		167 0558002584GY	1	BOX SWITCH 400/440V 350MPI
F		168 05S12012	4	SCREW METRIC M05-0.80x12
F		169 0558007862	2	BUSS BAR

M	LTR	ZONE	CHANGE	BY	DATE	CH'KD
	H		SEE SHEET 1			

SHEET 3 OF 3

ENGINEER DWG.	ENGLISH DWG		
	UNLESS OTHERWISE SPECIFIED,DIM ARE IN INCHES. TOL .XX ± .015 .XXX ± .005 ANGLES ± 1° CHAMFERS & C'SINKS ±2° SURFACE ROUGHNESS IS IN MICROINCHES 125 REMOVE ALL BURRS BREAK SHARP EDGES	PA-6100-97-09 RELEASED FOR	6/25/97 DATE
		ESAB WELDING & CUTTING PRODUCTS FLORENCE, SC. 29501	
		TITLE 350 MPI 400V 50/60Hz	
	SCALE.375	REPRO MADE FROM # SIMILAR TO D-36976	
	FIRST MADE FOR 350MPI 400V	SUP.	
	DRAWN BY BLP DATE 1/15/01	CHECKED BY DCG DATE 1/16/01	APPROVED BY GWD DATE 1/16/01 SUP. BY
			D 36977

NOV 1994

D-37504

COMPONENT LEGEND

LOCATION NUMBER	ITEM	DESCRIPTION
1	S1	SWITCH POWER 600V 63A
	T1	XFMR MAIN
MOV1,	2,3	MOV 510V
	IBR	MODULE INPUT BRIDGE
	SCR1	SCR 480V 12A
	R1	RES 50ohm 50W
C15	C16	CAP .22uf 1KV
	R5	RES 50ohm 1W
	L2	INDUCTOR DC
	C5	CAP 1900uf 450V
	S2	DUAL BREAKER W/2 AUX SW
	D3	
	PCB3	PCB IGBT DRIVER
	Q2	MODULE DUAL IGBT 200A 600V
	C14	CAP 1uf 600V
	T4	CURRENT TRANSDUCER
R14	R8	RES 20ohm 50W
C7	C6	CAP 20uf 400V
	C8	CAP .022uf
	R6,7	RES 4K 25W
	D1	DIODE OUTPUT
	C9	CAP .05uf
	R9	RES 5ohm 25W
	L1	INDUCTOR
	SH1	TRANSDUCER CURRENT
	P11	HOUSING CRIMP 4 PIN
	C11	CAP .02uf
2	F1	FUSE 480V 4A
	C1	CAP 1900uf 450V
	Q1	MODULE DUAL IGBT 200A 600V
	C13	CAP 1uf 600V
	T3	CURRENT TRANSDUCER
R4	R13	RES 20ohm 50W
	TS1,2	SWITCH THERMAL 15A 120V
	C4	CAP .022uf
C2	C3	CAP 20uf 400V
R3	R2	RES 4K 25W
	D2	DIODE OUTPUT
	C10	CAP .05uf
	R10	RES 5ohm 25W
	S4	SW TOGGLE SPDT 2POS 15A 125V
	S5	SW PB NORMALLY OPEN
	S3	SW ROTARY 2POLE 5 POS
	C12	CAP .02uf
3	PCB2	PCB LINE MONITOR
	M1	FAN MOTOR 1/16 HP
	T2	XFMR CONTROL
	PCB4	PCB METER
	PCB1	PCB CONTROL
R11	R12	POT LIN 10K 2W
	J1	RCPT PNL MNT 19 PIN
4	J2	RCPT PNL MNT 14 PIN
	S6	SW ROTARY 1 POLE 8POS
	TS3	SW THERMAL 15A 120V 131°

REF DRAWINGS
WIRING DIAGRAM – 37844
WIRE KIT FRONT – 37859
WIRE KIT REAR – 37600
WIRE KIT PRIMARY – 37852

M	LTR	CHANGE	BY	DATE	CHK'D
	D	CN-013289	TDG	9/18/01	WJB
	C	CN-003156	BLP	9-22-00	WJB
	B	CN-993194	PLM	6-10-99	WJB
	A	CN-993135	HTH	4-21-99	WJB

ENGLISH DWG. UNLESS OTHERWISE SPECIFIED, DIM ARE IN INCHES. TOL .XX ±, .XXX ±, ANGLES ±, CHAMFERS & C'SINKS ±2°, SURFACE ROUGHNESS IS IN MICROINCHES. REMOVE ALL BURRS BREAK SHARP EDGES

PA-6100-97-09 — 3/19/99 (RELEASED FOR / DATE)

ESAB WELDING & CUTTING PRODUCTS
FLORENCE SC 29501

TITLE: SCHEM DIAG 350 MPI 230V/460V.,

REPRO MADE FROM

SCALE: NONE — SIMILAR TO

FIRST MADE FOR — SUP.

DRAWN	CHECKED	APPROVED	SUP. BY
BY DRM	BY WJB	BY DTW	D-37504
DATE 3/12/99	DATE 3/19/99	DATE 3/19/99	

THIS DRAWING CONTAINS PROPRIETARY INFORMATION OF ESAB WELDING & CUTTING PRODUCTS AND IS LOANED WITH THE EXPRESS AGREEMENT THAT THIS DRAWING (1) WILL NOT BE REPRODUCED OR COPIED, (2) WILL NOT BE USED OTHER THAN IN WORK FOR ESAB WELDING & CUTTING PRODUCTS AND (3) WILL NOT BE DISCLOSED EXCEPT TO EMPLOYEES OF THE PARTY TO WHOM THIS DRAWING IS LOANED AND ON A CONFIDENTIAL BASIS.

MAR 1998

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION

REF DRAWINGS
SCHEMATIC DIAGRAM – 37504
WIRE KIT FRONT – 37859
WIRE KIT REAR – 37600
WIRE KIT PRIMARY – 37852

PCB1																									
P2		P3		P4		P6		P7		P8		P9		P10		P11		P12		P13	
1	TS1-1 VIO	1	T3-H1 ✱	1	R11-2 GRY	1	J1-S VIO	1	T2-X11 WHT ✱	1		1	PCB2 P2-4 GRY	1		1	S6-1 BLK	1		1	
2	TS2-2 VIO	2	T3-H2 ✱	2	R11-3 RED	2	S3B-7C BRN ▲	2	T2-X10 WHT ✱	2		2		2		2	S6-2 WHT	2		2	PCB2 P2-1 BLU
3	P11-1 RED	3	T4-H1 ✱	3	R12-1/2 BLK	3	J1-C ORN	3	T2-X7 RED ✱	3	J1-M BLK	3	PCB2 P2-3 VIO	3		3	S6-3 RED	3	PCB4 P1-3 BLK	3	
4	P11-2 BLK	4	T4-H2 ✱	4	R12-3 WHT	4	T2-X2 BLK ▲	4	T2-X8 BLK ✱	4	J1-L RED			4		4	S6-4 ORN	4	PCB4 P1-4 WHT	4	
5	P11-4 WHT			5	S5-2 BRN	5	J1-U RED	5	T2-X9 RED ✱	5	J1-K YEL			5		5	S6-5 BLU	5	PCB4 P1-5 RED	5	PCB2 P2-2 YEL
6	P11-3 GRN			6		6	T2-X3 WHT ▲	6	J2-K WHT	6						6	S6-6 YEL	6	PCB4 P1-6 ORN		
7	S3A-4 YEL			7	S3A-2 VIO	7	J2-B BLU	7	J2-I ORN	7	J1-H ORN					7	S6-7 GRY	7			
8	TS3-1 YEL			8	S3A-3 BLK	8	T2-X6 ✱	8	J2-M BLU	8	J1-G BRN					8	S6-8 BRN				
9	J1-N GRY			9	S4-2 YEL	9	J2-E YEL	9	J2-N YEL	9	J1-F BLU					9					
10	TS3-2 BLU			10		10	J2-F GRY	10	J2-L BRN	10	J1-E VIO					10	S6-C VIO				
				11	S3A-1 ORN	11	J2-C RED	11	F2-1 GRY												
				12	S5-1 BLU	12	J2-D VIO	12	J2-G VIO												
				13																	
				14	PCB4 P2-4 VIO																
				15	PCB4 P2-2 BLK																
				16	PCB4 P2-6 WHT																

PCB4			
P1		P2	
1		1	PCB2 P3-1 RED
2		2	PCB1 P4-15 BLK
3	PCB1 P12-3 BLK	3	PCB2 P3-2 ORN
4	PCB1 P12-4 WHT	4	PCB1 P4-14 VIO
5	PCB1 P12-5 RED	5	S4-3 BLU ▲
6	PCB1 P12-6 ORN	6	PCB1 P4-16 WHT
		7	PCB2 P3-3 GRY

J1	
A	T2-X1 BLK ✱
B	T2-X2 BLK ▲
C	PCB1 P6-3 ORN
D	GND-1 GRN
E	PCB1 P8-10 VIO
F	PCB1 P8-9 BLU
G	PCB1 P8-8 BRN
H	PCB1 P8-7 ORN
J	
K	PCB1 P8-5 YEL
L	PCB1 P8-4 RED POS OUT RED
M	PCB1 P8-3 BLK NEG OUT BLK
N	PCB1 P2-9 GRY
P	
R	
S	PCB1 P6-1 VIO
T	T2-X3 WHT ▲
U	PCB1 P6-5 RED
V	T2-X4 ✱

J2	
A	T2-X5 BLK ✱
B	PCB1 P6-7 BLU
C	PCB1 P6-11 RED
D	PCB1 P6-12 VIO
E	PCB1 P6-9 YEL
F	PCB1 P6-10 GRY
G	PCB1 P7-12 VIO
H	GND-2 GRN
I	PCB1 P7-7 ORN
J	F2-2 GRY
K	PCB1 P7-6 WHT
L	PCB1 P7-10 BRN
M	PCB1 P7-8 BLU
N	PCB1 P7-9 YEL

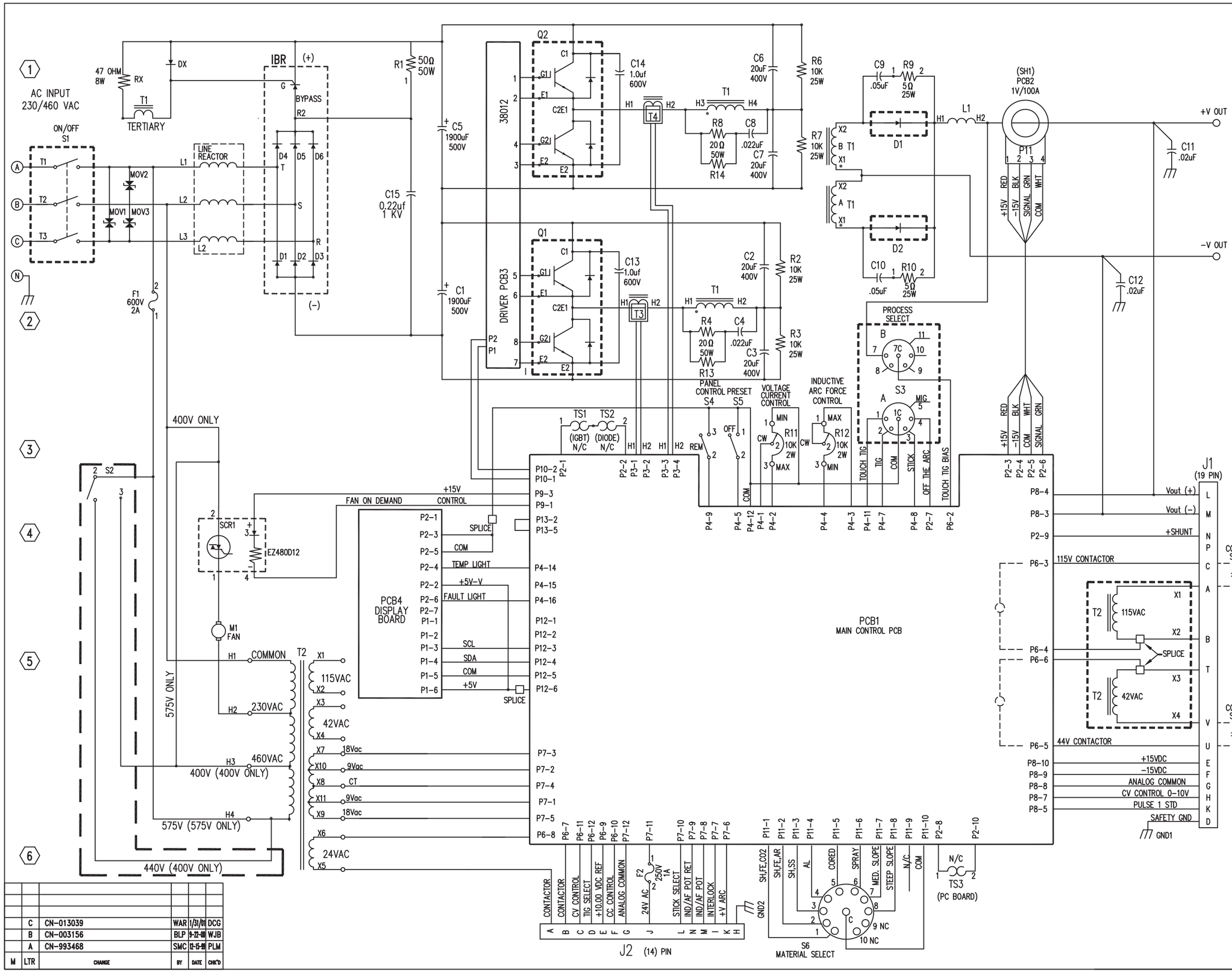
PCB2			
P1		P2		P3	
1	IBR-R GRY	1	PCB1 P13-2 BLU	1	PCB4 P2-1 RED
2		2	PCB1 P13-5 YEL	2	PCB4 P2-3 ORN
3	IBR-S WHT	3	PCB1 P9-3 VIO	3	PCB4 P2-7 GRY
4		4	PCB1 P9-1 GRY	4	
5	F1-2 BLK	5	S2-NC RED		
6		6	S2-NO YEL		
7	M1-2 ✱	7	S2-C BLU		
8		8			
9	S2-C VIO	9	SCR1-3 RED		
10		10	SCR1-4 BLK		
11	IBR(+) ORN ▲				
12	IBR(+) RED				
13	IBR-G BRN				
14					

P11	
1	PCB1 P2-3 RED
2	PCB1 P2-4 BLK
3	PCB1 P2-6 GRN
4	PCB1 P2-5 WHT

✱ SELF LEADS
▲ SPLICE

E	CN-083183	JBD	10/23/08	MEA
D	CN-013289	TDG	9/18/08	WJB
C	CN-003156	BLP	9/16/08	WJB
B	CN-993194	PLM	6/18/98	WJB
A	CN-993135	HTH	4-21-98	WJB
M LTR	CHANGE	BY	DATE	CHK'D

WIRING DIAGRAM 350MPI
37844



M	LTR	CHANGE	BY	DATE	CHK'D
	C	CN-013039	WAR	1/31/01	DCG
	B	CN-003156	BLP	9-22-00	WJB
	A	CN-993468	SMC	12-15-99	PLM

COMPONENT LEGEND

LOCATION NUMBER	ITEM	DESCRIPTION
1	S1	SWITCH POWER 600V 63A
	T1	XFMR MAIN
MOV1,	2,3	MOV 625V
	IBR	MODULE INPUT BRIDGE
	SCR1	SCR 480V 12A
	R1	RES 50ohm 50W
C15	C16	CAP .22uf 1KV
	R5	RES 50ohm 5W
	L2	LINE REACTOR
	C5	CAP 1900uf 500V
	D3	
	PCB3	PCB IGBT DRIVER
	Q2	MODULE DUAL IGBT 150A 1200V
	C14	CAP 1uf 600V
	T4	CURRENT TRANSFORMER
R14	R8	RES 20ohm 50W
C7	C6	CAP 20uf 400V
	C8	CAP .022uf
	R6,7	RES 10K 25W
	D1	DIODE OUTPUT
	C9	CAP .05uf
	R9	RES 5ohm 25W
	L1	INDUCTOR
	SH1	TRANSDUCER CURRENT
	P11	HOUSING CRIMP 4 PIN
	C11	CAP .02uf
2	F1	FUSE 480V 4A
	C1	CAP 1900uf 500V
	Q1	MODULE DUAL IGBT 150A 1200V
	C13	CAP 1uf 600V
	T3	CURRENT TRANSFORMER
R4	R13	RES 20ohm 50W
	TS1,2	SWITCH THERMAL 15A 120V
	C4	CAP .022uf
C2	C3	CAP 20uf 400V
R3	R2	RES 10K 25W
	D2	DIODE OUTPUT
	C10	CAP .05uf
	R10	RES 5ohm 25W
	S4	SW TOGGLE SPDT 2POS 15A 125V
	S5	SW PB NORMALLY OPEN
	S3	SW ROTARY 2POLE 5 POS
	C12	CAP .02uf
	M1	FAN MOTOR 1/16 HP
	T2	XFMR CONTROL
	PCB4	PCB METER
	PCB1	PCB CONTROL
R11	R12	POT LIN 10K 2W
	J1	RCPT PNL MNT 19 PIN
4	J2	RCPT PNL MNT 14 PIN
	S6	SW ROTARY 1 POLE 8POS
	TS3	SW THERMAL 15A 120V 131°

BILL OF MATERIALS

QUANTITIES ARE IN U/M ESTABLISHED BY INVENTORY

SYMBOL	ITEM NO.	PART OR CODE NO.	QTY.	DESCRIPTION

PCB1																							
P2		P3		P4		P6		P7		P8		P9		P10		P11		P12		P13	
1	TS1-1 VIO	1	T3-H1 ✳	1	R11-2 GRY	1		1	T2-X11 WHT ✳	1		1	SCR1-4 BLK	1		1	S6-1 BLK	1		1	
2	TS2-2 VIO	2	T3-H2 ✳	2	R11-3 RED	2	S3B-7C BRN ▲	2	T2-X10 WHT ✳	2		2		2		2	S6-2 WHT	2		2	PCB1 P13-5 YEL
3	P11-1 RED	3	T4-H1 ✳	3	R12-1/2 BLK	3	J1-C ORN	3	T2-X7 RED ✳	3	J1-M BLK	3	SCR1-3 RED	3		3	S6-3 RED	3	PCB4 P1-3 BLK	3	
4	P11-2 BLK	4	T4-H2 ✳	4	R12-3 WHT	4	T2-X2 BLK ▲	4	T2-X8 BLK ✳	4	J1-L RED			4		4	S6-4 ORN	4	PCB4 P1-4 WHT	4	
5	P11-4 WHT			5	S5-2 BRN	5	J1-U RED	5	T2-X9 RED ✳	5	J1-K YEL			5		5	S6-5 BLU	5	PCB4 P1-5 RED	5	PCB1 P13-2 YEL
6	P11-3 GRN			6		6	T2-X3 WHT ▲	6	J2-K WHT	6						6	S6-6 YEL	6	PCB4 P1-6 ORN ▲		
7	S3A-4 YEL ▲			7	S3A-2 VIO	7	J2-B BLU	7	J2-I ORN	7	J1-H ORN					7	S6-7 GRY	7			
8	TS3-1 RED			8	S3A-3 BLK	8	T2-X6 ✳	8	J2-M BLU	8	J1-G BRN					8	S6-8 BRN				
9	J1-N GRY			9	S4-2 YEL	9	J2-E YEL	9	J2-N YEL	9	J1-F BLU					9					
10	TS3-2 BLU			10		10	J2-F GRY	10	J2-L BRN	10	J1-E VIO					10	S6-C VIO				
				11	S3A-1 ORN	11	J2-C RED	11	F2-1 GRY												
				12	S5-1 BLU	12	J2-D VIO	12	J2-G VIO												
				13																	
				14	PCB4 P2-4 VIO																
				15																	
				16	PCB4 P2-6 WHT																

PCB4			
P1		P2	
1		1	
2		2	PCB4 P1-6/SPLICE PCB1 P12-6 ORN
3	PCB1 P12-3 BLK	3	PCB4 P2-5 BLU ▲
4	PCB1 P12-4 WHT	4	PCB1 P4-14 VIO
5	PCB1 P12-5 RED	5	S4-3 BLU ▲
6	PCB1 P12-6 ORN	6	PCB1 P4-16 WHT
		7	

J1	
A	T2-X1 BLK ✳
B	T2-X2 BLK ▲
C	PCB1 P6-3 ORN
D	GND-1 GRN
E	PCB1 P8-10 VIO
F	PCB1 P8-9 BLU
G	PCB1 P8-8 BRN
H	PCB1 P8-7 ORN
J	
K	PCB1 P8-5 YEL
L	PCB1 P8-4 RED POS OUT RED
M	PCB1 P8-3 BLK NEG OUT BLK
N	PCB1 P2-9 GRY
P	
R	
S	
T	T2-X3 WHT ▲
U	PCB1 P6-5 RED
V	T2-X4 WHT ✳

J2	
A	T2-X5 BLK ✳
B	PCB1 P6-7 BLU
C	PCB1 P6-11 RED
D	PCB1 P6-12 VIO
E	PCB1 P6-9 YEL
F	PCB1 P6-10 GRY
G	PCB1 P7-12 VIO
H	GND-2 GRN
I	PCB1 P7-7 ORN
J	F2-2 GRY
K	PCB1 P7-6 WHT
L	PCB1 P7-10 BRN
M	PCB1 P7-8 BLU
N	PCB1 P7-9 YEL

P11	
1	PCB1 P2-3 RED
2	PCB1 P2-4 BLK
3	PCB1 P2-6 GRN
4	PCB1 P2-5 WHT

	C	CN-013039	BLP	1/31/01	DCG
	B	CN-003156	BLP	9/15/00	WJB
	A	CN-993468	SMC	12-15-99	PLM
M	LTR	CHANGE	BY	DATE	CHK'D

REF DRAWINGS:
SCHEMATIC DIAGRAM: 0558001345
WIRE KIT PRIMARY: 0558001352, 0558002541
WIRE KIT REAR: 0558001348
WIRE KIT FRONT: 37859

NOTES:

1. DETAIL "D" OF WIRE KIT 0558001352, 0558002541 TO BE CONNECTED BETWEEN TI-G SPLICE AND TI-POS SPLICE
2. DETAIL "A" OF WIRE KIT 0558001352, 0558002541 TO BE CONNECTED BETWEEN IBR-G AND IBR-POS – NOTE POLARITY

✳ SELF LEADS
▲ SPLICE

350MPI 400V/575V
0558001346